LOVELY PROFESSIONAL UNIVERSITY

ACCOUNTING FOR MANAGERS

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SYLLABUS

Accounting for Managers

Objectives: To impart knowledge and skills considered essential for managers to operate successfully in the dynamic world.

To imbibe the student with fundamental understanding of managerial accounting and how it assists an organization's management team in the overall management process.

S. No.	Description
1	Basic Accounting Review: Accounting Principles, Basic Accounting terms
2	Journalizing Transactions, Ledger Posting and Trial Balance
3	Sub-division of Journal , Final Accounts
4	Basic Cost Concepts: Preparation of Cost Sheet, Elements of cost, Classification of cost, cost ascertainment, Financial Statements: Analysis and Interpretation: Meaning , types, Ratio Analysis, Classification of Ratios
5	Fund Flow Statement, Cash Flow Statement
6	Budgetary Control: Meaning, Limitation, Installation, Classification. Innovative Budgeting Techniques: Programme Budgeting, Performance Budgeting, Responsibility Accounting, Zero Based Budgeting.
7	Standard Costing: Meaning, Budgetary Control and Standard Costing, Estimated costing, Standard costing as a management tool, Limitations, Determination of standard cost, Standard Cost sheet.
8	Variance Analysis: Cost variance, Direct Material Cost Variance, Direct Labour Cost Variance, Overhead Cost Variance
9	Marginal costing and Profit Planning: Absorption Costing, Marginal Costing and direct costing, Differential costing, Cost-volume profit Analysis, Break Even Analysis, Advantages, Limitations, Application, Costing Technique.
10	Decisions involving alternative choices: Concept, Steps, Determination of sales mix, Make or buy decisions, Own or Hire, Shut down or continue, Pricing Decisions: Concept, Objectives, Types, Factors affecting pricing of a product, Product Pricing Methods, Transfer Pricing.

CONTENT

Unit 1:	Basic Accounting Review *Gopika Juneja, Lovely Professional University*	1
Unit 2:	Recording of Transactions *Gopika Juneja, Lovely Professional University*	18
Unit 3:	Sub-division of Journals *Gopika Juneja, Lovely Professional University*	41
Unit 4:	Final Accounts *Manpreet Kaur, Lovely Professional University*	55
Unit 5:	Basic Cost Concepts *Manpreet Kaur, Lovely Professional University*	90
Unit 6:	Financial Statements Analysis and Interpretation *Manpreet Kaur, Lovely Professional University*	114
Unit 7:	Fund Flow Statement *Manpreet Kaur, Lovely Professional University*	142
Unit 8:	Cash Flow Statement *Manpreet Kaur, Lovely Professional University*	161
Unit 9:	Budgetary Control *Pooja, Lovely Professional University*	180
Unit 10:	Standard Costing *Pooja, Lovely Professional University*	209
Unit 11:	Variance Analysis *Pooja, Lovely Professional University*	221
Unit 12:	Marginal Costing and Profit Planning *Gopika Juneja, Lovely Professional University*	249
Unit 13:	Decision Involving Alternative Choices *Gopika Juneja, Lovely Professional University*	275
Unit 14:	Pricing Decision *Pooja, Lovely Professional University*	286

Notes

Unit 1: Basic Accounting Review

CONTENTS

Objectives
Introduction
1.1 Meaning of Accounting
1.2 Process of Accounting
1.2.1 Cash System
1.2.2 Accrual System
1.2.3 Values
1.3 Accounting Principles
1.4 Accounting Concepts
1.4.1 Money Measurement Concept
1.4.2 Business Entity Concept
1.4.3 Going Concern Concept
1.4.4 Matching Concept
1.4.5 Accounting Period Concept
1.4.6 Duality or Double Entry Accounting Concept
1.4.7 Cost Concept
1.5 Accounting Conventions
1.6 Basic Accounting Terms
1.7 Summary
1.8 Keywords
1.9 Self Assessment
1.10 Review Questions
1.11 Further Readings

Objectives

After studying this unit, you will be able to:

- Explain accounting principles
- Describe accounting Concepts and Conventions
- State the basic accounting terms.

Introduction

The main object of a business is to earn profit. Accounting is the medium of recording the business transactions and it is considered as a language of business. After studying this unit, you will be able to understand the concept of accounting, principles of accounting and basic accounting terms.

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If the volume of sales of the products is high and the numbers of transaction of the business are very high, it is impossible for the businessman to keep all these transactions in his mind. Thus, a need of recording of all these business transactions arise. The recording of the transactions and eventually finding out whether the business has earned profits is the essence of accounting.

1.1 Meaning of Accounting

Accounting is defined as either recording or recounting the information of the business enterprise, transpired during the specific period in the summarized form.

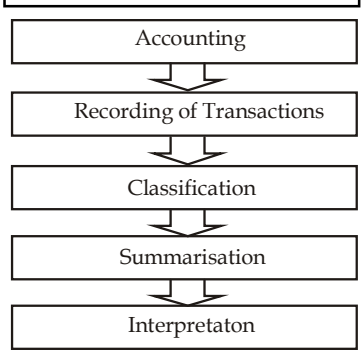
Accounting is broadly classified into three different functions, viz.

Recording
Classifying and } Transactions of Financial Nature
Summarizing

Caution Accounting is not an equivalent function to book keeping. Accounting is broader in scope than the book keeping, the earlier cannot be equated to the latter.

Accounting is a combination of various functions, *viz.*

Figure 1.1



American Institute of Certified Public Accountants Association defines the term accounting as follows "Accounting is the process of recording, classifying, summarizing in a significant manner of transactions which are in financial character and finally results are interpreted."

Qualities of Accounting

1. In accounting, transactions which are non-financial in character can not be recorded.
2. Transactions are recorded either individually or collectively according to their groups.
3. Users should be able to make use of information.

1.2 Process of Accounting

Accounting is described as origin for the creation of information and the continuous utility of information. Now the question is how is this information created? For this, there is a step by step process, as shown in Figure 1.2.

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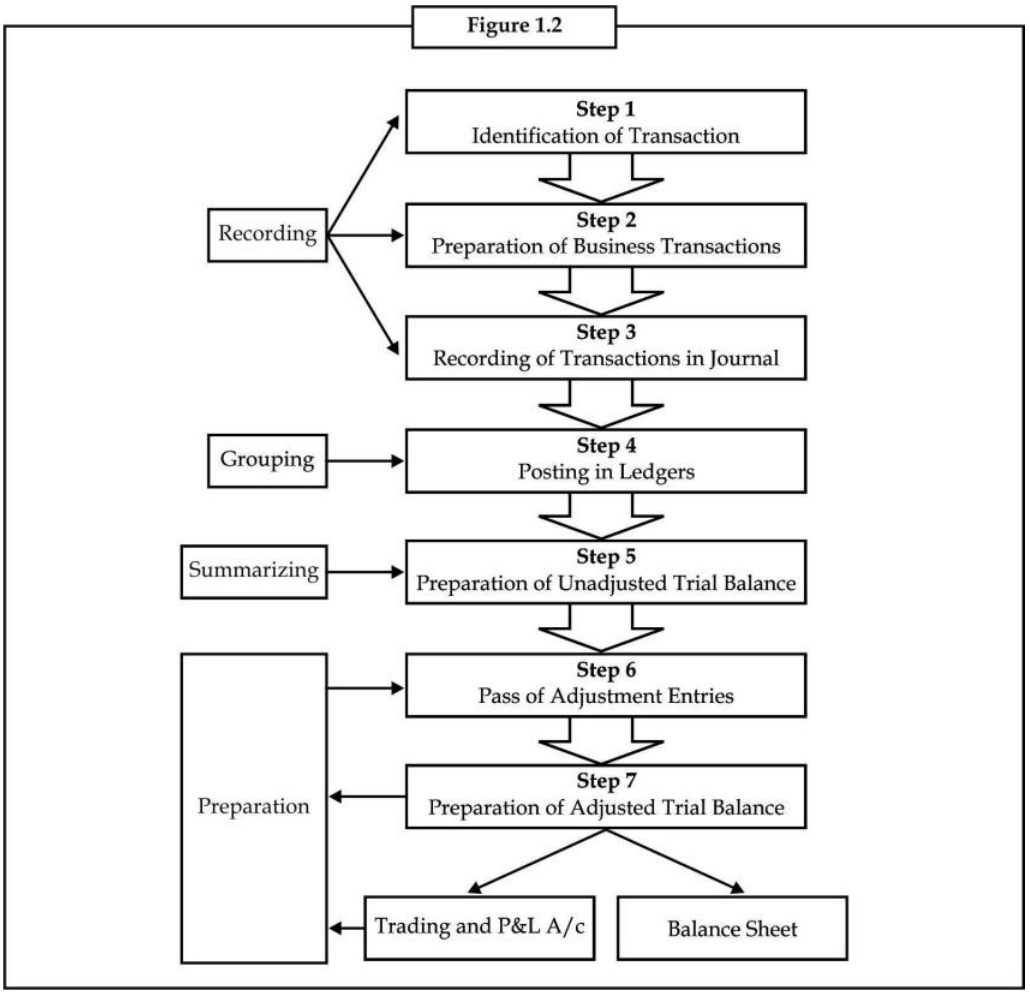
Figure 1.2



After the creation of information, the developed information should be appropriately recorded. Are there any scales/guides available for the recording of information? If yes, what are they?

They are as follows:

1. ***What to record:*** Financial Transaction is only to be recorded
2. ***When to record:*** Time relevance of the transaction at the moment of recording
3. ***How to record:*** Methodology of recording — It contains two different systems of accounting *viz.* cash system and accrual system.

1.2.1 Cash System

The revenues are recognized only at the moment of realization but the expenses are recognized at the moment of payment. For example sale of goods will be considered under this method that only at the moment of receipt of cash out of sale of goods. The charges which were paid only will be taken into consideration but the outstanding, not yet paid will not be considered.

Example: Rent paid only will be considered but not the outstanding of rent charges.

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1.2.2 Accrual System

The revenues are recognized only at the time of occurrence and expenses are recognized only at the moment of incurring.

Whether the cash is received or not out of the sales, that will be registered/counted as total value of the sales.

The next most important step is to record the transactions. For recording, the value of the transaction is inevitable, to record values, the classification of values must be essentially done.

1.2.3 Values

There are four different values in the business practices that should be followed or recorded in the system of accounting:

1. ***Original Value:*** It is the value of the asset only at the moment of purchase or acquisition
2. ***Book Value:*** It is the value of the asset maintained in the books of the account. The book value of the asset could be computed as follows:

   Book Value = Gross (Original) value of the asset – Accumulated depreciation
3. ***Realizable Value:*** Value at which the assets are realized
4. ***Present Value:*** Market value of the asset

Notes ***Classifying:*** It is one of the most important processes of the accounting. Under this, grouping of transactions is carried out on the basis of certain segments or divisions. It can be described as a method of rational segregation of the transactions. The segregation is generally done into two categories, viz.

1. Cash transactions, and
2. Non-cash transactions.

The preparation of the ledger A/cs and Subsidiary books are prepared on the basis of rational segregation of accounting transactions. For eg, the preparation of cash book is involved in the unification of cash transactions.

Summarizing: The ledger books are appropriately balanced and listed one after another. The list of the name of the various ledger book A/cs and their accounting balances is known as Trial Balance. The trial balance is summary of all unadjusted name of the accounts and their balances.

Preparation: After preparing, the summary of various unadjusted A/cs are required to adjust to the tune of adjustment entries which were not taken into consideration at the time of preparing the trial balance. Immediately after the incorporation of adjustments, the final statement is readily available for interpretations.

Did u know? What are the purposes of preparing financial statements?

1. Accounting provides necessary information for decisions to be taken initially and it facilitates the enterprise to pave way for the implementation of actions.
2. It exhibits the financial track path and the position of the organization.

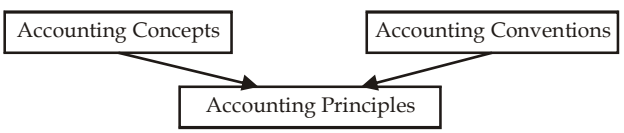
Notes

3. Being business in the dynamic environment, it is required to face the ever changing environment. In order to meet the needs of the ever changing environment, the policies are to be formulated for the smooth conduct of the business.
4. It equips the management to discharge the obligations at every moment.
5. Obligations to customers, investors, employees, to renovate/restructure and so on.

1.3 Accounting Principles

The transactions of the business enterprise are recorded in the business language, which routed through accounting. The entire accounting system is governed by the practice of accountancy. The accountancy is being practiced through the universal principles which are wholly led by the concepts and conventions.

Figure 1.3



1.4 Accounting Concepts

The following are the most important concepts of accounting:

1. Money measurement concept
2. Business entity concept
3. Going concern concept
4. Matching concept
5. Accounting period concept
6. Duality or double entry concept
7. Cost concept

Let us understand each of them one by one.

1.4.1 Money Measurement Concept

This is the concept tunes the system of accounting as fruitful in recording the transactions and events of the enterprise only in terms of money. The money is used as well as expressed as a denominator of the business events and transactions. The transactions which are not in the expression of monetary terms cannot be registered in the book of accounts as transactions.

Examples:

1. 5 machines, 1 ton of raw material, 6 fork-lift trucks, 10 lorries and so on. The early mentioned items are not expressed in terms of money instead they are illustrated only in numbers. The worth of the items is getting differed from one to the other. To record the above enlisted items in the book of accounts, all the assets should be converted into money.
2. 5 lathe machines worth ₹ 1,00,000; 1 ton of raw materials worth amounted ₹ 15,00,000 and so on.

The transactions which are not in financial in character cannot be entered in the book of accounts.

Recording of transactions are only in terms of money in the process of accounting

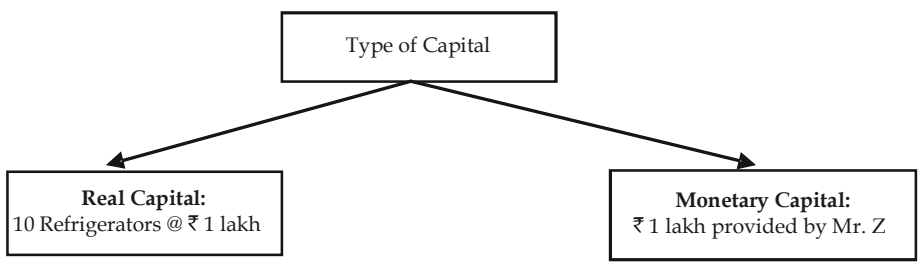
Notes

1.4.2 Business Entity Concept

This concept treats the owner as totally a different entity from the business. To put in to nutshell "Owner is different and Business is different". The capital which is brought inside the firm by the owner, at the commencement of the firm is known as capital. The amount of the capital, which was initially invested, should be returned to the owner considered as due to the owner; who was nothing but the contributory of the capital.

Example: Mr. Z has brought a capital of ₹ 1 lakh for the commencement of retailing business of refrigerators. The brought capital of ₹ 1 lakh is utilized for the purchase of refrigerators from the Godrej Ltd. He finally bought 10 different sized refrigerators. Out of 10 refrigerators, one was taken away by himself as the owner.

Figure 1.4



In the Angle of the Firm

The amount of the capital ₹ 1 lakh has to be returned to the owner Mr. Z, which considered being as due. Among the 10 newly bought refrigerators for trading, one was taken away by the owner for his personal usage. The one refrigerator drawn by the owner for his personal usage led the firm to sell only 9 refrigerators. It means that ₹ 90,000 out of ₹ 1 Lakh is the volume of real capital and the ₹ 10,000 worth of the refrigerator considered to be as drawings; which illustrates the capital owed by the firm is only ₹ 90,000 not ₹ 1 lakh.

In the Angle of the Owner

The refrigerator drawn worth of ₹ 10,000 nothing but ₹ 10,000 worth of real capital of the firm was taken for personal use as drawings reduced the total volume of the capital of the firm from ₹ 1 lakh to ₹ 90,000, which expected the firm to return the capital due amounted ₹ 90,000.

Owner and business organizations are two separate entities

1.4.3 Going Concern Concept

The concept deals with the quality of long lasting status of the business enterprise irrespective of the owners' status, whether he is alive or not. This concept is known as concept of long-term assets. The fixed assets are bought in the intention to earn profits during the season of the business. The assets which are idle during the slack season of the business retained for future usage, in spite of that those assets are frequently sold out by the firm immediately after the utility leads to mean that those assets are not fixed assets but tradable assets. The fixed assets are retained by the firm even after the usage is only due to the principle of long lastingness of the business enterprise. If the business disposes the assets immediately after

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the current usage by not considering the future utility of the assets in the firm which will not distinguish in between the long term assets and short term assets known as tradable in categories.

Accounting concept for long lastingness of the business enterprise

1.4.4 Matching Concept

This concept only makes the entire accounting system as meaningful to determine the volume of earnings or losses of the firm at every level of transaction; which is an outcome of matching in between the revenues and expenses.

The worth of the transaction is identified through matching of revenues which are mainly generated from the sales volume and the expenses of the firm at every level.

Example: The cost of goods sold and selling price of the pen of ABC Ltd. are ₹ 5 and ₹ 10 respectively. The firm produced 100 ball pens during the first shift and out of 100 pens manufactured 20 pens are considered to be damage which cannot be supplied to the customers, rejected by the quality circle department. There was an order from the firm XYZ Ltd. which amounted to 80 pens to be supplied immediately.

The worth of the transaction of the firm at every level of the transaction is being studied only through the matching of revenues with the expenses.

At first instance, the firm produced 100 pens which incurred the total cost of ₹ 500 required to match with the expected revenues of ₹ 1,000; illustrated the level of profit how much would it accrue if the entire level of production is sold out?

If the entire production capacity is sold out in the market the profit level would be ₹ 500. Out of the 100 pens manufactured 20 were identified not ideal for supply as damages, the remaining 80 pens were supplied to the individual retailer. The retailer has been dispatched 80 pens amounted ₹ 400 which equated to ₹ 800 of the expected sales. At the moment of dispatching, the firm expected to earn a profit of ₹ 400 at the level of 80 pens supplied. After the dispatch, the retailer found that 50 pens are in accordance with the order placement but the remaining are to the tune of the retailers' specifications. Finally, the retailer has agreed to make the payment of the bill only in accordance with the order placed which amounted ₹ 500 out of the expenses of the manufacturer ₹ 250.

This concept facilitates to identify the worth of the transaction at every moment.

Concept of fusion in between the expenses and revenues

1.4.5 Accounting Period Concept

The life period of the business is of a long span which is classified into the operating periods which are smaller in duration. The accounting period may be either calendar year of Jan.-Dec. or fiscal year of April-Mar. The operating periods are not equivalent among the trading firms. This means that the operating period of one firm may be shorter than the other one. The ultimate aim of the concept is to nullify the deviations of the operating periods of various traders in the trading practice.

According to the Companies Act, 1956, the accounting period should not exceed more than 15 months.

Concept of uniform accounting horizon among the firms to evade deviations

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1.4.6 Duality or Double Entry Accounting Concept

It is the only concept which portrays the two sides of a single transaction. The law of entire business revolves around only on mutual agreement sharing policy among the players. How mutual agreement is taking place?

The entire principle of business is mainly conducted on mutual agreement among the parties from one occasion to another. The payment of wages is only made by the firm out of the services of labourers. What kind of mutual agreement in sharing the benefits is taking place? The services of the labourers are availed by the firm through the payment of wages. Likewise, the labourers are regularly getting wages for their services in the firm.

Payment of Wages = Labourers' service

In the angle of accounting aspects of a firm, the labourer services are availed through the payment of wages nothing but the mutual sharing of benefits. This is denominated into two different facets of accounting, *viz.* Debit and Credit. Every debit transaction is appropriately equated with the transaction of credit.

All the above samples of transactions are being carried out by the firm through the raising of financial resources. The resources raised are finally deployed in terms of assets. It means that the total funds raised by the firm are equated to the total investments.

From the Table 1.1, it is clearly evidenced that the entire raised financial resources are applied in the form of asset applications. It means that the total liabilities are equivalent to the total assets of the firm.

Total Financial Resources → Total Assets

Table 1.1: Duality Concept

Liabilities	Assets
Share Capital	Plant and Machinery
Preference Share Capital	Land and Buildings
Debentures/Long-term Borrowing	Fixtures and tools
Retained Earnings	Delivery vehicles
Commercial Paper	Furniture – Industry and office
Public Deposits	Office administrative devices
Bank Loan	Marketable securities
Overdraft	Short-term investments
Pre-received income	Closing stock
Outstanding expenses	Prepaid expenses
Sundry Creditors	Outstanding Income
Bills Payable	Sundry debtors
Provision for taxation	Bill Receivable
	Cash at Bank
	Cash in Hand

Notes

1.4.7 Cost Concept

It is the concept closely relevant with the going concern concept. Under this concept, the transactions are recorded only in terms of cost rather than in market value. Fixed assets are only entered in terms of the purchase price which is an original cost of the asset at the moment of purchase. The depreciation is deducted from the original value which is the initial purchase price of the asset will highlight the book value of the asset at the end of the accounting period. The marketing value of the asset should not be taken into consideration, why? The main reason is that the market value of the asset is subject to fluctuations due to demand and supply forces. The entry of market value of the asset will require the frequent update of information to the tune of changes in the market. Will it be possible to record the changes taken place in the market then and there? This is not only impossible for regular updating of information but also leads to lot of consequences. Though the firm is ready to register the market value, which market value has to be taken into consideration? The market value can be bifurcated into two categories, *viz.*

1. Realizable value, and
2. Replacement value

Realizable value is the value of the asset at the moment of sale or realization.

Replacement value is another value which considered at the moment of replacing the old asset with the new one.

These two cannot be the same at single point of time and the wear and tear of the asset will play pivotal role in fixing the realization value which has the demarcation over the later.

1.5 Accounting Conventions

Accounting conventions are bearing the practical considerations in recording the transactions of the business enterprise in systematic manner.

1. Convention of consistency
2. Convention of conservatism
3. Convention of disclosure
4. Convention of materiality

Let us understand each of them one by one.

1. ***Convention of Consistency:*** The nature of recording the transactions should not be changed at any cause or moment. It should be maintained throughout the life period of the firm. If a firm follows the straight line method of charging the depreciation since its inception should be followed without any change. The firm should not alter the method of charging the depreciation from one method to another. The change cannot be entertained. If any change has to be incorporated, the valid reason for change should be emphasized.
2. ***Convention of Conservatism:*** The conservatism won't give any emphasis on the anticipation of the firm, instead it gives paramount importance to all possible uneventualities of the firm without considering the future profits.

   The most important of the rule of guidance at the moment of valuing the stock is as follows:

Stock of the goods should be valued either market price or cost whichever is lower to anticipate the future losses due to default in the payments of the customers

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This provision is created for bad and doubtful debts of the firm in order to meet the losses expected out of the defaulters.

According to this convention, the entire status of the firm should be highlighted/presented in detail without hiding anything; which has to furnish the required information to various parties involved in the process of the firm.

3. ***Convention of Disclosure:*** Convention of disclosure requires that all material and relevant facts concerning financial statements should be fully disclosed. Full disclosure means that there should be full, fair and adequate disclosure of accounting information. Adequate means sufficient set of information to be disclosed. Fair indicates an equitable treatment of users. Full refers to complete and detailed presentation of information. Thus, the convention of disclosure suggests that every financial statement should fully disclose all relevant information.

Example: Let us take the example of business.

The business provides financial information to all interested parties like investors, lenders, creditors, shareholders, etc. The shareholder would like to know profitability of the firm while the creditor would like to know the solvency of the business. In the same way, other parties would be interested in the financial information according to their objectives. This is possible if financial statement discloses all relevant information in full, fair and adequate manner.

If the financial information is complete, then only it is possible for different parties to use that information in the required manner.

Similarly, if there is a change in accounting methods of providing depreciation on fixed assets, or in the methods of valuation of stock or in making provision for doubtful debts, these should be clearly shown in the Balance Sheet by way of notes. In short, we can say that all important facts are to be fully disclosed, otherwise financial statements would be incomplete, unreliable and misleading.

4. ***Convention of Materiality:*** The convention of materiality states that, to make financial statements meaningful, only material fact i.e., important and relevant information should be supplied to the users of accounting information. The question that arises here is what a material fact is. Information is material if its omission or misstatement could influence the economic decision of users taken on the basis of the financial statements. Materiality depends on the size of the item or error judged in the particular circumstances of its omission or misstatement. Thus, materiality provides a threshold or cut-off point rather than being a primary qualitative characteristic which information must have if it is to be useful.

Example: A businessman starts a textile mill. Take only two items weaving machine and bulbs for light in the office. He will purchase these items for his business. From the accounting point of view, weaving machine is more important than bulbs. Therefore, distributing the cost of machine over various years is important. But, it is not so important to distribute the cost of bulbs. If an accountant starts keeping the details of each bulb, then his work would be unduly burdened with every small detail. It is also not useful for the businessman to know every small details since it does not affect the financial position in any significant manner.

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Caselet

Rule versus Principle

Students of accounting would be well aware of the long discussed differences between rule-based accounting and principle-based accounting. Both have their protagonists. While the US GAAP is rule-based, the International Accounting Standards (IAS), both as IAS and IFRS, are principle-based.

The debate on which is better will be put to rest when the US GAAP converges with IFRS eventually and becomes principle-based. Being principle-based means that broad principles are laid out by the standard-fixing body and the interpretation is left to the users of these standards.

The problem (and also the benefit) with principle-based accounting is that most of the times, in a situation which requires a finding, one would have to exercise a great deal of judgment based on substance as opposed to a readymade solution being available for a particular issue prescribed in the rule-based accounting.

While the US accounting is considered to be rule-based, one can find echoes of principle-based accounting also in it. In the widely publicised 1969 case of Continental Vending where the auditors were questioned for lack of professional standards, the court gave a direction to the jury to look at the facts and the substance of the case rather than rules of accountancy and mere adherence to GAAP.

The court held that in the audit report the statement "fairly presented … in accordance with generally accepted accounting principles" is two statements rather than one, i.e., "fairly presented" is principle-based and the other "in accordance with generally accepted accounting principles" is rule-based.

Problems for Auditors

The preparation of financial statements in accordance with the GAAP in a rule-based environment, however, presents problems to the auditors. If an auditor were to confront the management over a certain treatment of a transaction, the management is likely to ask the auditor "show me where it says I can't do that".

In other words, in a rule-based environment, the onus is on the auditor to demonstrate clearly that the particular treatment is not permitted and hence closes the avenues for the auditor to develop further arguments that would be available in a principle-based accounting environment (Principles-based Accounting, by Ronald M. Mano, Matthew Mouritsen and Ryan Pace, published in the CPA Journal, February 2006).

Since accounting standards followed in India have their origin in the IAS, the Indian accounting standards are principle-based. However, there are exceptions to the rule. One prime example is the Income Recognition and Asset Classification (IRAC) norms prescribed by the Reserve Bank of India for provisioning for non-performing assets applicable to banks.

Thus, if any asset is non-performing, based on certain prescribed criteria, a provision is created for the potential loan loss irrespective of the security available with the bank.

Subjectivity Issue

Principle-based accounting has its own issues too. Ian Wright, Director of Corporate Reporting at the Financial Reporting Council of UK, writing in accountancy magazine (October 2008), talks about the subjectivity that is present in the IFRS.

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The IFRS is full of words and phrases that are open to interpretation. The accompanying table has a selection of the probabilities in IFRS literature that a user is expected to interpret in the context of understanding what an accounting standard requires.

Ian Wright also identifies other issues that are potentially problematic.

The IFRS literature contains an increasing range of technical terms which don't translate well into languages other than English. Also, the standards were written in different eras and sometimes by individual national standard-setters due to which the usage of the English language differs resulting in them being structured in disparate ways.

One can therefore see the potential hazards in interpreting a principle-based accounting standard that contains highly subjective phraseology.

In this context, one can expect problems of interpretation in India also. For instance, the word "shall" (a key word in accounting standards) is used in a manner that is completely different from its usage in countries where English is the mother tongue. Any user of IFRS would therefore need to be alive to these issues when interpreting IFRS.

Hint: The preparation of financial statements in accordance with the GAAP in a rule-based environment.

Source: www.thehindubusinessline.com

1.6 Basic Accounting Terms

The terms, which are generally used in the day-to-day business, are called accounting terminology. So it is very much necessary to know all the terms properly. Some of the terms which are frequently used are given below:

1. ***Capital:*** It is the money invested by the owner of the business. It is also known as owners' equity or as net worth. It is the total assets minus the liabilities. In other words, excess of assets over liabilities is termed as capital. As we know that business is considered as a separate entity, hence capital introduced by the owner is also considered as liability for the business. This can be shown in an algebraic way as follows:

   Capital = total assets – total liabilities

2. ***Assets***: Assets are the things/properties of value used by the business in its operations. In other words, anything by which the firm gets some benefit, is termed as asset. According to Finny & Miller, "Assets are future economic benefits, the rights which are owned or controlled by an organization or individual" whereas Kohler in Dictionary for Accountants says "Any owned physical object (tangible) or right (intangible) having economic value to the owner is an asset. The Institute of Chartered Accountants of India defines assets as, "tangible objects or Intangible rights owned by an enterprise and carrying probable future benefits". Thus, it is clear from the above definitions that an asset must have future economic benefit which must be controlled by an enterprise. The assets may be broadly classified as fixed assets and current assets:

   (i) *Fixed Assets* are the assets which are purchased for the purpose of operating the business and not for resale such as land and building, plant and machinery and furniture, etc.

   (ii) *Current Assets* are the assets which are kept for short-term for converting into cash or for resale such as unsold goods, debtors, bills receivable, bank balance, etc.

3. ***Liability:*** It may be defined as currently existing obligations which a business enterprise requires to meet sometime in future. According to Finny and Miller, "Liabilities are debts,

Notes

they are amounts owned to creditors." In other words, liabilities mean liabilities other than the capital (contributed by the owner of the business). F.A.S.B. Stanford, 1980 has defined liabilities as "liabilities are probable future sacrifices of economic benefits arising from present obligations of a particular entity to transfer assets or provide services to other entities in the future as a result of past transactions or events". Whereas according to Accounting Principles Board (APB), liabilities are defined as, "economic obligations of an enterprise that are recognized and measured in conformity with generally accepted accounting principles." Thus, it is clear from the above definitions that liability is a legal obligation to pay for the transaction that has already taken place. Liabilities may be classified into three types namely:

(i) *Short-term liabilities* are such obligations which are payable within one year. Examples are creditors, Bills payable, overdraft from a bank, etc.

(ii) *Long-term liabilities* are such obligations which are payable after a period of one year such as debentures, bonds issued by the company, etc.

(iii) *Contingent liability* is a liability which arises only on the happening of an uncertain event. If it happens, the contingent liability is there. If it does not happen, there is no liability. Such liabilities are not shown in the balance sheet, but are given as a foot note. Example of such liabilities are (i) Liability on account of bills discounted, (ii) Claims against the firm not acknowledged as debts.

4. ***Debtors:*** The debtors are the persons who owe to an enterprise an amount for receiving goods or services on credit. The total balance outstanding at the end of a particular date is shown as an asset in the balance sheet of an enterprise. The debtors are also known as accounts receivables.

5. ***Creditors:*** The creditors are the persons to whom the firm owes for providing goods or services.

6. ***Revenue:*** The amounts which earned by a business by selling a product or rendering its services to the customers is called revenue. Such as sales, commission, interest, dividends, rent and royalties received. It is the amount which is added to the capital as a result of business operations.

7. ***Equity:*** Equity is, normally, ownership or percentage of ownership in a company or items of value

8. ***Bills of Exchange:*** A written order from one person (the payor) to another, signed by the person giving it, requiring the person to whom it is addressed to pay on demand or at some fixed future date, a certain sum of money, to either the person identified as payee or to any person presenting the bill of exchange.

9. ***Income:*** The financial gain (earned or unearned) accruing over a given period of time.

10. ***Expenditure:*** A payment or incurrence of an obligation to make a future payment for an asset or service rendered.

11. ***Profit and Loss A/c:*** Profit & Loss Account is the second part of Trading and Profit & Loss Account. Trading Account shows the gross profit which is the difference of sales and cost of sale. Thus the gross profit can not treated as net profit while the businessman wants to know how much net profit he has earned from the operating activities during a period. For this purpose Profit & Loss Account is prepared keeping in mind all the operating and non-operating incomes and losses of the business. In the debit (left hand side) side all the expenses and losses are disclosed and in the credit side (right hand side) all the incomes are disclosed. The excess of credit side over debit side is called net profit while the excess of debit side over credit side shows net loss.

Notes

1.7 Summary

- Accounting is the process of recording, classifying, summarizing in a significant manner of transactions which are in financial character and finally results are interpreted.
- The revenues are recognized only at the moment of realization but the expenses are recognized at the moment of payment.
- The charges which were paid only are taken into consideration but the outstanding, not yet paid is not considered.
- The revenues are recognized only at the time of occurrence and expenses are recognized only at the moment of incurring.
- The financial statements are found to be more useful to many people immediately after presentation only in order to study the financial status of the enterprise in the angle of their own objectives.
- The entire accounting system is governed by the practice of accountancy.
- The accountancy is being practiced through the universal principles which are wholly led by the concepts and conventions.
- Money measurement concept tunes the system of accounting as fruitful in recording the transactions and events of the enterprise only in terms of money.
- Business entity concept treats the owner as totally a different entity from the business.
- Going concern concept deals with the quality of long lasting status of the business enterprise irrespective of the owners' status, whether he is alive or not.
- Matching concept only makes the entire accounting system as meaningful to determine the volume of earnings or losses of the firm at every level of transaction.
- Duality or Double entry accounting concept is the only concept which portrays the two sides of a single transaction.

1.8 Keywords

Accounting Process: It includes the recording of financial transactions, ledger posting, preparation of financial statements and analyzing and interpretation of them.

Accrual System: The revenues are recognized only at the time of occurrence and expenses are recognized only at the moment of incurring.

Assets: The economic resources of an entity. They include such items as cash, accounts receivable (amounts owed to a firm by its customers), inventories, land, buildings, equipment, and even intangible assets like patents and other legal rights and claims. Assets are presumed to entail probable future economic benefits to the owner.

Book Value: It is the value of the asset maintained in the books of the account. The book value of the asset could be computed as follows:

Book Value = Gross (Original) value of the asset – Accumulated depreciation

Liabilities: Amounts owed to others relating to loans, extensions of credit, and other obligations arising in the course of business.

1.9 Self Assessment

Notes

Fill in the blanks:

1. Accounting records all the transactions which can be expressed either in ..... .
2. Every financial transaction of the business has ..... and recorded at two places.
3. ..... enables the comparison of the profit or performance of a business in a year with the performance of another year.
4. The revenues are recognized only at the moment of ..... .
5. Book Value = Gross (Original) value of the asset ..... .
6. The ..... are the persons who owe to an enterprise an amount for receiving goods or services on credit.
7. ..... is a liability which arises only on the happening of an uncertain event.
8. ..... = total assets – total liabilities

Multiple choice Questions

9. Three key activities of the accounting function are identifying transactions, recording transactions, and communicating transactions. The proper order for these activities is considered to be which of the following?
   (a) Communicating, recording, and identifying.
   (b) Recording, communicating, and identifying.
   (c) Identifying, communicating, and recording.
   (d) Identifying, recording, and communicating.
   (e) None of the above
10. Which one of the following users of accounting information is considered to be an external user of accounting information rather than an internal user of accounting information?
   (a) Sales staff (b) Company managers
   (c) Company customers (d) Officers and directors
   (e) Budget officers
11. All of the following people can properly be called managers. Which one of the following individuals is not considered an internal user of accounting information?
   (a) Service manager
   (b) Research and development manager
   (c) Production manager
   (d) Partner in CA firm charged with conducting the company's external audit
   (e) Human resources manager
12. A college student pays ₹ 150 cash for her textbook. In the student's opinion, the textbook is worth ₹ 50. In accounting, however, the value of the textbook is assumed to be and is

Notes

recorded at the ₹ 150 amount. The accounting principle that is most demonstrated by this example is:

(a) The cost principle (b) The going-concern principle

(c) The business entity principle (d) The monetary unit principle

(e) The conservatism principle

13. The basic accounting equation is Assets = Liabilities + Equity. The Equity term of the equation can be further broken down into several other terms. Assume that the entity is a sole proprietorship. Which of the following statements is correct?

(a) Additional investments by the business owner will increase equity; and revenues will decrease equity.

(b) Additional investments by the business owner will decrease equity; and revenues will increase equity.

(c) Increases in expenses will decrease equity; and owner withdrawals will decrease equity.

(d) Revenues will increase equity; and owner withdrawals will increase equity.

(e) Revenues will decrease equity; and owner withdrawals will increase equity.

14. If at the end of the accounting period the company's liabilities total ₹ 19,000 and its equity totals ₹ 40,000, then what must be the total of assets?

(a) ₹ 14,000 (b) ₹ 40,000

(c) ₹ 21,000 (d) ₹ 59,000

(e) None of the above

15. If during the current accounting period the company's assets increased by ₹ 24,000 and equity increased by ₹ 5,000, then how did liabilities change?

(a) Increased by ₹ 29,000 (b) Increased by ₹ 24,000

(c) Decreased by ₹ 5,000 (d) Decreased by ₹ 19,000

(e) Increased by ₹ 19,000

1.10 Review Questions

1. Accounting is the process of recording, classifying and summarizing of accounting transactions. Explain.

2. The entire accounting system is governed by the practice of accountancy. What are the key principles used in accounting?

3. What are the key assumptions of going concern concept?

4. Every debit transaction is appropriately equated with the transaction of credit. Define.

5. Classify the various kinds of values in accounting process.

6. Distinguish between material and immaterial transactions of business.

7. Singania Chartered Accountants Firm established in the year 1956, having very good number of corporate clients. It continuously maintains the quality in audit administration with the clients since its early inception. The firm is eagerly looking for promising students

Notes

who are having greater aspirations to become auditors. The firm is having an objective to recruit freshers to conduct preliminary auditing process with their corporate clients.

For which the firm would like to select the right person who is having conceptual knowledge as well as application on the subjects. It has given the following Balance sheet to the participants to study the conceptual applications. The participants are required to enlist the various concepts and conventions of accounting.

(a) List out the various accounting concepts dealt in the above balance sheet.

(b) Explain the treatment of accounting concepts.

8. Why does the accounting equation remain in balance?

9. Liability is defined as currently existing obligations which a business enterprise requires to meet sometime in future. Explain.

10. What are the key accounting conventions?

Answers: Self Assessment

1.	money or money's worth	2.	dual effect
3.	Horizontal Consistency	4.	realization
5.	Accumulated depreciation	6.	debtors
7.	Contingent liability	8.	Capital
9.	(d)	10.	(c)
11.	(d)	12.	(a)
13.	(c)	14.	(d)
15.	(e)		

1.11 Further Readings

Books

Khan and Jain, "*Management Accounting*".

M. P. Pandikumar, "*Accounting & Finance for Managers*", Excel Books, New Delhi.

R. L. Gupta and Radhaswamy, "*Advanced Accountancy*".

S. N. Maheswari, "*Management Accounting*".

V. K. Goyal, "*Financial Accounting*", Excel Books, New Delhi.

Online link

www.futureaccountant.com

Notes

Unit 2: Recording of Transactions

CONTENTS

Objectives

Introduction

2.1 Classification of Accounts

2.2 Personal Account

2.3 Real Account

2.4 Nominal Accounts

2.5 Journalizing Transactions

2.6 Journal Entries in between the Accounts of Two Different Categories

2.7 Ledger Posting

2.8 Trial Balance

2.9 Summary

2.10 Keywords

2.11 Self Assessment

2.12 Review Questions

2.13 Further Readings

Objectives

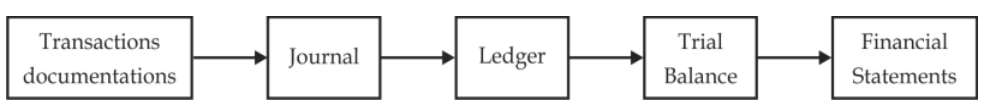
After studying this unit, you will be able to:

- Illustrate the Journalizing Transactions
- Prepare ledger Posting and Trial balance

Introduction

In the last unit, you learnt about the basic concepts of accounting. The unit discussed about the concept of accounting, principles of accounting and different branches of accounting.

In the present unit, you will study about the recording of accounting transactions. The unit covers the key aspects of accounting like types of accounting system, journal, ledger and balancing the accounts. Recording of accounting transactions is a process which generally includes five steps. The sequence of five steps in recording and reporting transactions is as follows:



As discussed earlier accounting is the art of recording, classifying and summarizing the business transactions of the financial nature. Under the recording process of accounting journal and subsidiary books are maintained, under classification of transactions the ledger is maintained

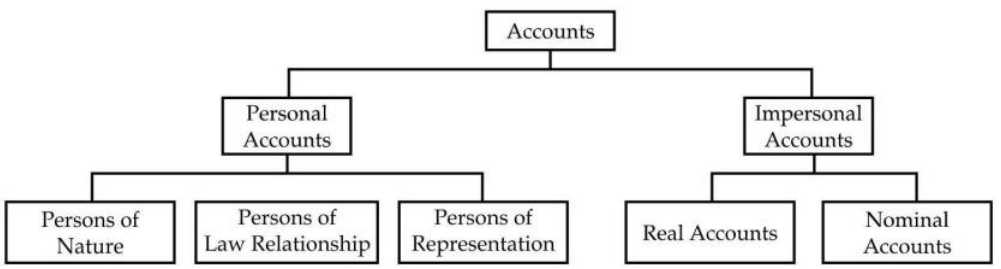
Notes

while in the summarizing process trial balance and final accounts (P&L A/c and Balance Sheet) are prepared.

2.1 Classification of Accounts

For classification, the entire process of accounting brought under three major segments; which are broadly grouped into two categories, *viz.* Personal Accounts and Impersonal Accounts. The Impersonal accounts are further classified into two categories, *viz.* Real Accounts and Nominal Accounts.

Figure 2.1



2.2 Personal Account

It is an account which deals with a due balance either to or from these individuals on a particular period. It is an account that normally reveals the outstanding balance of the firm to individuals.

Examples:
1. Outstanding balance to suppliers.
2. Outstanding balance from customers.

This is the only account which emphasizes the future relationship in between the business firm and the individuals. Personal accounts can be classified into three categories on the basis of individuals, *viz.*

1. Persons of Nature
2. Persons of Artificial Relationship
3. Persons of Representations.

Let us understand each of them one by one.

1. ***Persons of Nature:*** Persons who are nothing but outcome of nature i.e. almighty.
2. ***Persons of Artificial Relationship:*** Persons who are made out of artificial relationship through legal structure.

Example: Organizations, corporate, partnership firm, etc.

The companies and partnership firm are governed by The Companies Act, 1956, and the Partnership Act. The relationship among the owners of the company or partners of the firm is totally structured through respective laws.

Example: LIC and SBI

Notes

These governed by the artificial relationship among the members through LIC act, SBI Act and the Companies Act 1956 and so on respectively.

3. ***Persons of Representations:*** This classification represents amount outstanding or prepaid in connection with the individual transactions.

The personal account is the account of future relationship; to maintain the relationship of future in two different angles, *viz.*

(a) Receiver of the benefits from the firm

Example: The credit sale of the goods worth of ₹ 1,500 to Mr X.

In this transaction Mr. X is the receiver of the benefits through the credit sale of the firm. Till the collection of the sale benefits, the firm should maintain the relationship of business with the Mr. X in the books of accounts.

(b) Giver of the benefits to the firm.

Example: The credit purchase of the goods worth of ₹ 3,000 from Mr. Y.

The giver of the goods nothing but the supplier of the goods Mr. Y should be recorded in the books of the firm till the payment of dues of the credit purchase. The future relationship is maintained in the books of the accounts till the payment process is over.

Debit the Receiver Credit the Giver

2.3 Real Account

It is a major classification which highlights the real worth of the assets. This account deals with especially the movement of assets. It is an account reveals the asset value and movement (taking place in between the firm and also other parties due to any transactions).

The movement of the assets can be classified into two categories, *viz.*

1. Assets which are coming into the firm.
2. Assets which are going out of the firm.

Whenever any movement of the assets takes place with reference to any transaction either coming into the firm or going out of the firm, it should be recorded in accordance with the set golden rules of this account.

Debit what comes in Credit what goes out

2.4 Nominal Accounts

This is an account deals with the amount of expenses incurred or incomes earned. It includes all expenses and losses as well as incomes and gains of the enterprise. This nominal account records the expenses and incomes which are not carried forwarded to near future.

Debit all the expenses and losses Credit all incomes and gains

Notes

2.5 Journalizing Transactions

The practice starts with the journalizing of entries. After journalisation, the entries passed in the journal will be passed into the ledger A/c. The immediate next stage is to prepare the trial balance.

Did u know? **What is meant by the journal entry?**

It is an entry systematically recorded to the tune of golden rules of accounting in the journal book is known as journal entries.

The journal entries are recorded in the sequential order. The order of recording is conventionally done on the basis of date. The journal entry usually contains two different parts, which are nothing but two different accounts affecting the transactions.

Date	Particulars	Ledger Folio	Debit (₹)	Credit (₹)
Number of the day in the month, Name of the month and Year in full	To debit the name of the account	Page number in the respective ledger		
	To credit the name of the account			

Journalising the entries is different from one transaction to another. The difference is only due to nature and characteristics of the transactions. To journalise as easy as possible, the systematic approach to be adopted to post the transactions without any ambiguity.

Notes Journalising can be generally categorized into following various categories:

1. Taking place within the same natured accounts.
2. Taking part in between accounts of two different in categories.

First, we will discuss the journalizing of entries of the same natured accounts. This can be classified into various segments:

1. Transactions only in between the personal accounts
2. Transactions only in between the real accounts

Under the category of transactions which affect only the personal accounts are as follows:

1. Between the persons of the nature
2. Between the persons of the artificial relationship
3. Between the persons of representations

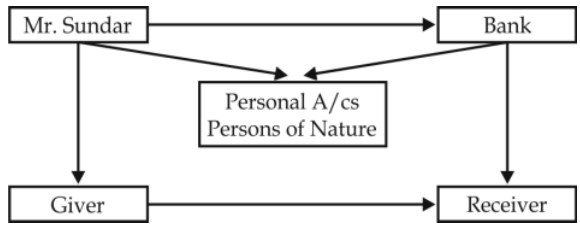
Caution The points to be observed at the moment of journalizing:

1. The nature of the accounts to be identified
2. The accounts to be correlated to the golden rules
3. The entry to be passed through proper debiting and crediting of the accounts respectively.

Notes

The meaning of the transaction should be made explicit for easier understanding through brief and catchy narration to follow as well as evade the ambiguity in near future.

Example: Mr. Sundar is a debtor who has paid ₹ 1,500 in the bank A/c



1. Transaction is identified which is in between two different persons under the personal A/c, they are nothing but persons of nature.
2. The benefits are shared in between two persons, *viz.* Mr. Sundar and Banker who are nothing but giver and receiver of the benefits respectively.
3. It means that Sundar is the giver of ₹ 1,500 to Banker who is the receiver of the same ₹ 1,500

Debit the Receiver	Banks	Debit the Melvin A/c
Credit the Giver	Sundar	Credit the Sundar A/c

Final step is to pass the journal entry

Bank A/c	Dr	₹1,500	
To Sundar A/c			₹1,500

(Being cash is paid by Sundar to Bank A/c)

2.6 Journal Entries in between the Accounts of Two Different Categories

Transactions are in between the Real A/c and Personal A/c

This type of the transaction is mainly governed by one important principle that future relationship. It major focuses on the maintenance of future relationship among the parities involved, till the realization of the transaction is over.

Example: Goods sold to Gopal ₹ 15,000/-

Meaning: The goods were sold on credit to Gopal amounted ₹ 15,000.

In the given transaction, there are two different A/cs, *viz.* Real A/c and Personal A/c

During the sales, irrespective of nature, goods are moving out of the firm, which finally will reach the individual Gopal. The goods, which are sold out to Gopal led to movement of goods out of the firm. Any movement of asset should be referred only to the tune of Real A/c. The goods which are going out of the firm could be recorded as transaction under the Real A/c, i.e. "Credit what goes out".

While recording the transaction, it should not be entered as Goods A/c. The reason for goods going out of the firm is only due to sales which have to be registered in the books of accounts at the time of entering the journal entries.

Notes

The second account which gets affected is the personal A/c of representations. The goods sold out on credit led to register the receiver of goods who has not paid at the moment of sale. Gopal is the individual received the goods on credit during the sales expected to make the payment as per the terms of credit period. Till the maturity of the credit period agreed, the firm should wait and collect the amount from the individual who is nothing but the receiver of goods.

Movement-out – Real A/c	Goods are moving out of the firm	Credit what goes out Sales A/c
Receiver of benefits- Personal A/c	Receiver of the goods on credit with future relationship	Debit the receiver Gopal A/c

Next step is to record the journal entry

Gopal A/c	Dr	₹ 15,000	
To Sales A/c			₹ 15,000

(Being goods sold on credit to Gopal)

Transaction in between the Real A/c and Nominal A/c

Example: Office Rent paid ₹ 10,000

The two different accounts involved in the above illustrated transaction are the Rent A/c and Cash A/c. It is because of the cash payment at the moment of making the payment of rent.

The Rent which is paid to the owner is an expense out of the benefits derived out of the asset during the previous month. In accordance with the Nominal A/c all the expenses are to be recorded, i.e. "Debit all the expenses and losses".

The second is in relevance with the cash payment which finally led to the movement of cash resources from the firm to the owner of the Asset. This mobility of the assets leads to movement-out which in connection with the Real A/c is the account for the assets.

Rent paid	Expense- Office Rent paid	Nominal A/c- Debit All expenses and losses
Movement -out	Cash – moving out of the firm	Real A/c- Credit what goes out

Example: Journalize the following transactions with narration:

Date	Particulars	₹
2010		
June 1	**Receive cash from Ramu**	**2,500**
June 4	**Purchase goods for cash**	**1,000**
June 5	**Sold goods to Hari**	**4,000**
June 8	**Bought furniture from Raju**	**500**
June 10	**Paid for office stationery**	**150**

Notes

Solution:

Journal Entries

Date	Particulars		L.F.	₹	₹
2010 June 1	Cash a/c To Ramu (Cash received from Ramu)	Dr.		2,500	 2,500
June 4	Purchases a/c To cash a/c (Goods purchased for cash)	Dr.		1,000	 1,000
June 5	Hari To Goods a/c (Sales A/c) (Goods sold to Hari)	Dr.		4,000	 4,000
June 8	Furniture a/c To Raju (Furniture bought from Raju)	Dr.		500	 500
June 10	Office Stationery a/c To cash a/c (Paid for office stationery)	Dr.		150	 150

Task Identify nature of the transactions:

Ramchander has purchased goods on credit from M/s Royals Aventis for ₹ 15,000. The portions of the goods were found to be damaged which worth of ₹ 5,000. Ramchander immediately returned the damaged goods to Royals.

1. Identify the various types of accounts involved in the above illustrated transactions.
2. Pass the journal entries with regards to the nature of accounts involved.

2.7 Ledger Posting

Classification of transactions is being done only on the basis of preparing the ledger accounts. The accounts are classified on the basis of nature and characteristics.

Did u know? **How are the account transactions classified?**

The accounts are classified through the preparation of ledger.

Ledger is nothing but preliminary book of accounting transactions at which, each account is separately maintained through the allotment of various pages for exclusive recording. The exclusive allotment of pages is made for every account to finalize their balances. Finally, ledger can be understood that is a document of grouping the transactions under one heading.

It is a fundamental book of accounts which mainly highlights the status of the accounts.

Example: Plant & Machineries' Ledger A/c should reveal the transactions of the sale and purchase of the plant & machinery.

Notes

The journal entries that are recorded nothing but posting of the entries in the ledger book of accounts. Posting/entering the journal entries are routinely carried out immediately after the transactions.

Prior to discussing the posting of journal entries into the ledger accounts, everybody should know the contents of the ledger. The ledger is segmented into two different categories.

Pro forma of the Ledger Account
Name of the Account

Dr Cr

Date	Particular	Date	Particular
	To		By

Journal entries are divided into two categories, viz:

1. Debit item of the transaction
2. Credit item of the transaction

Once the journal entries are identified for classification, the entries should be recorded in accordance with the date order of the transactions in the respective pages.

While recording a transaction, normally a journal entry has got an impact on two or even three different accounts.

Ledgering: It is a process of recording the transactions under one group from the early process of journalizing. Without journalizing, ledgering is not meaningful. The process of ledgering involves various steps. The process begins only at the completion of journalizing and ends at the end of balancing of journal accounts.

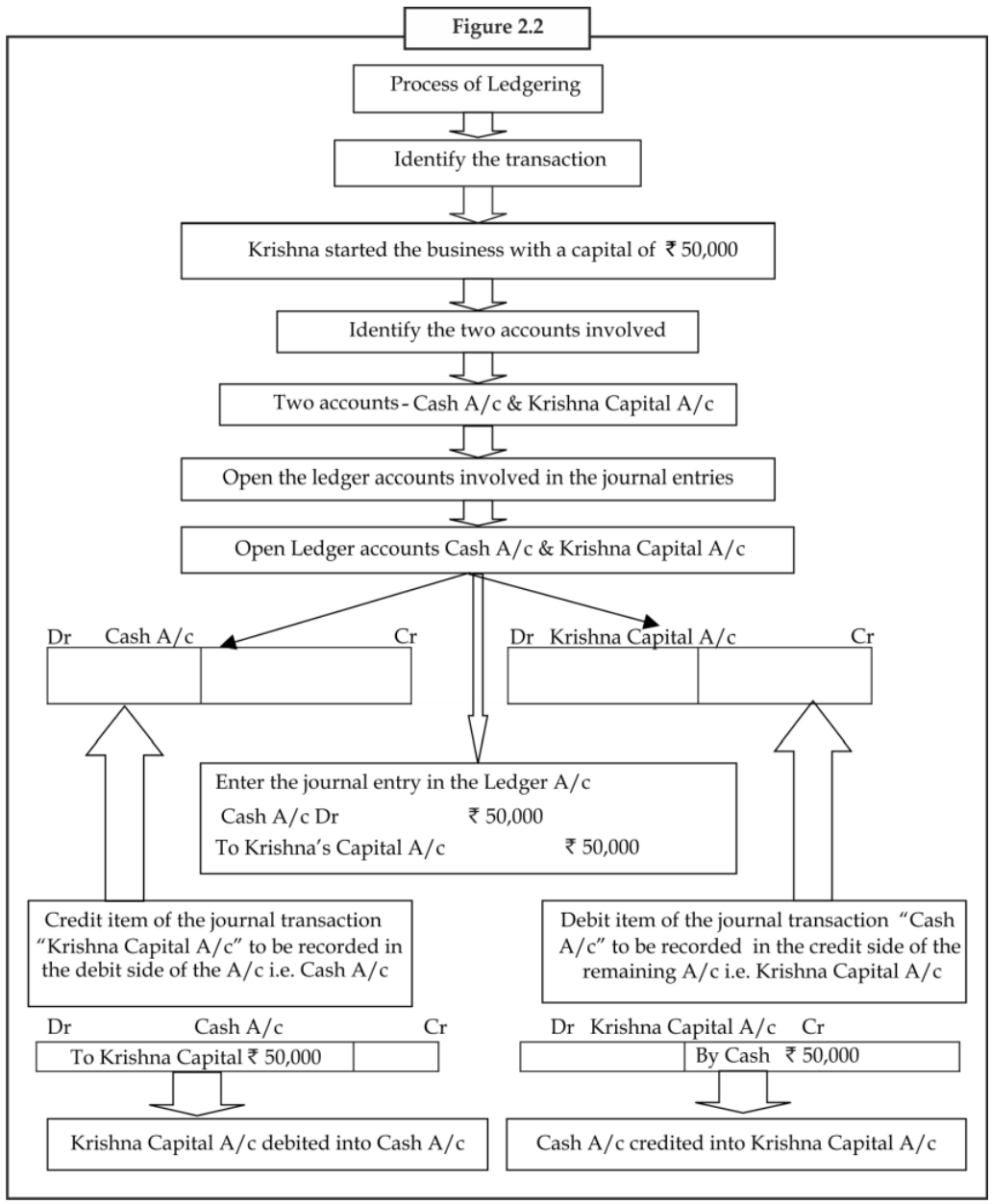
The next step is to Balance the individual Ledger A/c:

How to balance the Ledger A/c?

The individual Ledger A/c may have more than two transactions during the specified period.

1. The first step is to find out the totals of debit and credit suide of the Ledger account.
2. The second step is to compare the totals of the two different sides.
3. The third step is to find out the total of which side is greater over the other.
4. The fourth step is to identify the difference among the two side's balances i.e., debit and credit side totals.
5. The fifth step is the most important step which balances the difference on the total of the side which bears lesser total over the greater.
6. If the balance of the debit side of the ledger is more than the credit side it is called as Debit balance ledger and vice-versa in the case of Credit balance ledger.
7. The closing balance of one ledger account will automatically become an opening balance of the same ledger account for the next accounting period.

Notes



Example: Post the journal entries into respective ledger accounts and list out their accounting balances.

(i) Jan 1,2010 Mr. Sundar has started business with a capital of ₹ 50,000.

		Dr	Cr
		₹	₹
Jan 1,2010	Cash A/c Dr	50,000	
	To Sundar Capital A/c		50,000
Being capital brought by Sundar as cash			

Notes

(ii) Jan 2, 2010 Goods purchased ₹ 10,000

			₹	₹
Jan 2, 2010	Purchase A/c	Dr	10,000	
	To Cash A/c			10,000
Being cash purchase is made				

(iii) Jan 5, 2010 Goods sold ₹ 5,000

			₹	₹
Jan 5, 2010	CashA/c	Dr	5,000	
	To Sale A/c			5,000
Being cash sale is made				

(iv) Jan 10, 2010 Goods purchased from Mittal & Co ₹ 10,000

			₹	₹
Jan 10, 2010	Purchase A/c	Dr	10,000	
	To Mittal A/c			10,000
Being credit purchase from Mittal				

(v) Jan 11, 2010 Goods sold to Ganesh & co ₹ 10,000

			₹	₹
Jan 11, 2010	Ganesh A/c	Dr	10,000	
	To SaleA/c			10,000
Being credit sale made to Ganesh				

(vi) Jan 12, 2010 Goods returned to Mittal & Co ₹ 1,500

			₹	₹
Jan 12, 2010	Mittal &Co A/c	Dr	1,500	
	To Purchase Return A/c			1,500
(Being the goods returned to supplier Mittal &Co)				

(vii) Jan 20, 2010 Goods returned from Ganesh ₹2,000

			₹	₹
Jan 20, 2010	Sales ReturnA/c	Dr	2,000	
	To Ganesh&co			2,000
Being sales return made by Ganesh &Co				

(viii) Jan 31, 2010 Office Rent paid ₹ 500

			₹	₹
Jan 31, 2010	Office Rent A/c	Dr	500	
	To Cash A/c			500
Being office rent paid				

Notes

(ix) Feb 2, 2010 Interim Cash Dividend received

		₹	₹
Feb 2, 2010	Cash A/c Dr	3,000	
	To Interim Dividend		3,000
Being cash interim dividend received			

(x) Feb 8, 2010 Cash withdrawn from bank ₹ 2,000

		₹	₹
Feb 8, 2010	Cash A/c Dr	2,000	
	To Bank		2,000
Being cash withdrawn from the bank			

List out the various accounts that are involved in the enterprise during the year.

(i) Cash Acccount (ii) Sundar Capital Account

(iii) Purchase Account (iv) Sales Account

(v) Mittal & Co. Account (vi) Ganesh & Co Account

(vii) Sales Return Account (viii) Purchase Return Account

(ix) Office Rent Account (x) Interim Dividend Account

(xi) Bank Account

Dr **Cash Account** **Cr**

Date	Particulars	₹	Date	Particulars	₹
Jan 1	To Sundar Capital	50,000	Jan 2	By Purchase	10,000
Jan 5	To Sale	5,000	Jan 31	By Office Rent	500
Feb 2	To Interim Dividend	3,000		By Balance c/d	49,500
Feb 8	To Bank	2,000			
		60,000			60,000

To balance B/d 49,500

Notes Debit side total is greater than the credit side total of the cash account. After determining the difference, the cash account is nothing but Debit Balance Account.

Dr **Sundar Capital Account** **Cr**

Date	Particulars	₹	Date	Particulars	₹
	To Balance c/d	50,000	Jan 1	By Cash	50,000
		50,000			50,000

By Balance B/d 50,000

Notes

Notes Sundar capital account is having the greater credit balance over the debit balance account which led to credit balance account.

Dr **Purchase Account** **Cr**

Date	Particulars	₹	Date	Particulars	₹
Jan 2 Jan 10	To Cash To Mittal&Co	10,000 10,000		By Balance c/d	20,000
		20,000			20,000

To Balance B/d 20,000

Notes Purchase account is bearing the debit balance account.

Dr **Sale Account** **Cr**

Date	Particulars	₹	Date	Particulars	₹
	To Balance c/d	15,000	Jan 5 Jan 11	By Cash By Ganesh	5,000 10,000
		15,000			15,000

By Balance B/d 15,000

Notes Sale account is bearing the credit balance account.

Dr **Sales Return Account** **Cr**

Date	Particulars	₹	Date	Particulars	₹
Jan 20	To Ganesh	2,000		By Balance c/d	2,000
		2,000			2000

To Balance B/d 2000

Notes Sales return account is having the debit balance account.

Notes

Dr **Purchase Return Account** **Cr**

Date	Particular	₹	Date	Particulars	₹
	To Balance c/d	1,500	Jan 12	By Mittal &Co	1,500
		1,500			

By Balance B/d 1,500

Notes Purchase return account is bearing credit balance account.

Dr **Mittal & Co Account** **Cr**

Date	Particulars	₹	Date	Particulars	₹
Jan 12	To Purchase Return To Balance c/d	1,500 8,500	Jan 10	By Purchase	10,000
		10,000			10,000

By Balance B/d 8,500

Notes Mittal &Co account is having the greater total in the credit side than the debit side led to credit balance at the closing.

Dr **Ganesh & Co Account** **Cr**

Date	Particulars	₹	Date	Particulars	₹
Jan 11	To Sale	10,000	Jan 20	By Sale Return By Balance c/d	2,000 8,000
		10,000			10,000

To Balance B/d 8,000

Notes Ganesh & Co. account is bearing a greater debit side total than the credit side total which led to have debit balance account.

Dr **Office Rent Account** **Cr**

Date	Particulars	₹	Date	Particulars	₹
Jan 31	To Cash	500		By Balance c/d	500
		500			500

To Balance B/d 500

Notes

Notes Office rent account is bearing debit balance.

Dr **Interim Dividend Account** **Cr**

Date	Particulars	₹	Date	Particulars	₹
	To Balance c/d	3,000	Feb 2	By Cash	3,000
		3,000			3,000
				By Balance B/d	3,000

Notes Interim dividend account is having the credit balance.

Dr **Bank Account** **Cr**

Date	Particulars	₹	Date	Particulars	₹
	To Balance c/d	2,000	Feb 2	By Cash	2,000
		2,000			2,000
				By Balance B/d	2,000

Notes Bank account is having the credit balance. Nothing but overdraft.

2.8 Trial Balance

The third stage is to prepare the statement (summary) of accounting balances and their names for the specified accounting period, known as Trial Balance.

Trial Balance is a list of accounting balances and their names; of the enterprise during the specified period, which includes debit and credit balances of the various balanced ledger accounts out of the journal entries.

From the above illustrated example, there are eleven different ledger accounts of the enterprise which posted out of the journal entries already transacted, are finally balanced. The balanced ledger accounts should be prepared as a summary list of their balances and names. The total of both balances are equivalent to each other. The major reason for the equivalent balances on both sides is only due to posting of entries to the tune of Double Entry Accounting Concept (Or) Duality Concept. This is a concept that equates the total amount of resources raised with the total amount of applications of the enterprise.

Purposes of preparing the Trial Balance

1. To prepare a statement of disclosure of final accounting balances of various ledger accounts on a particular date.

Notes

2. To prepare a statement of cross checking device of accounting, while in the process of posting of entries which mainly on the basis of Double entry accounting principle. It helps the accountant to have systematic posting of entries.
3. It assists the enterprise for the preparation of Trading & Profit and Loss Accounts for the year ended…….. and the Balance sheet as on dated ……..
4. It provides a birds' eye view of accounting balances of various ledger accounts during the specified period.

The preparation of the trial balance is classified on the basis of three different accounts, viz:

1. Real Account (R)
2. Nominal Account (N)
3. Personal Account (P)

The classification of the transactions is done not only on the basis of accounts but also on the basis of payments and receipts. These payments and receipts are further classified into following categories:

Payments category- Debit Balance

Debit Balance is the source of following golden rules of the three different accounts:

Personal Account: Debit the Receiver

Nominal Account: Debit all the expenses and losses

Real Account: Debit what comes in and Debit all Assets

1. Trading Expense Category (TE)
2. Profit and Loss Category (PE)
3. Assets - Balance Sheet (BA)

Receipts category-Credit Balance

Credit Balance is the major source of the other half of the golden rules of accounting

Personal Account: Credit the Giver

Nominal Account: Credit all income and gains

Real Account: Credit what goes out and Credit all Liabilities

1. Trading Income Category (TI)
2. Profit and Loss Category (PI)
3. Liabilities - Balance Sheet (BL)

The above columns, if put in a statement form, can be depicted as given below:

Trial Balance

as on .....

	Dr.	Cr.
Particulars	**(₹)**	**(₹)**

Notes

Example: (Preparation of Trial Balance)

Mr. Akshey Kumar furnishes the following balances as on 31st March, 2008. You have to prepare a Trial Balance with the following information:

Particulars	₹	Particulars	₹
Interest on Capital	24,000	Salaries	1,28,000
Creditors	6,00,000	Capital	8,00,000
Discount Received	23,000	Drawings	2,46,000
Loan	1,74,000	Machinery	3,00,000
Purchase Returns	40,000	Bills Payable	20,000
Sales Return	6,000	Furniture	6,00,000
Advertisement	1,63,000	Debtors	5,00,000
Commission Received	20,000	Bank Loan	2,00,000
Rent	10,000	Patents	60,000
Purchases	19,00,000		
Sales	32,60,000		
Opening Stock	12,00,000		

Solution:

Trial Balance
(as on 31st March, 2008)

	Dr.	Cr.
Particulars	**(₹)**	**(₹)**
Interest on Capital	24,000	–
Creditors	–	6,00,000
Discount Received	–	23,000
Loan	–	1,74,000
Purchase Returns	–	40,000
Sale Returns	6,000	–
Advertisement	1,63,000	–
Commission Received	–	20,000
Rent	10,000	–
Purchases	19,00,000	–
Sales	–	32,60,000
Opening Stock	12,00,000	–
Salaries	1,28,000	–
Capital	–	8,00,000
Drawings	2,46,000	–
Machinery	3,00,000	–
Bills Payable	–	20,000
Furniture	6,00,000	–
Debtors	5,00,000	–
Bank Loan	–	2 00 000
Patents	60,000	–
Total	**51,37,000**	**51,37,000**

From the above trial balances, it is clear that the total of debit side will agree with the total of credit side if Ledger accounts are arithmetically correct. If these totals does not tally with each other, there will be some error in the ledger accounts.

Notes

Trial Balance Errors

There can be certain errors in recording the accounting transactions in primary and secondary books of accounts. When there are some errors in the accounting then the balance of both the sides of trail balance will not tally. Some of the errors are easy to detect but there are certain errors which are not detected through the trial balance. In other words, a trial balance would agree in spite of these errors. These errors are very difficult to detect because you will not be aware of such errors. The examples of such errors are errors of principle, errors of omission, errors of commission, compensating errors, etc.

Types of errors

There are two types of errors:

Errors which cannot be located by trial balance

The following errors cannot be detected by the trial balance means inspite of agreeing the totals of debit side and credit side, these errors occur in the accounts.

1. ***Error of Omission:*** These errors occur when any business transaction is completely or partially omitted from the recording in the books of original records. As goods, sold of ₹10,000 to Mr. Ram, is not entered anywhere in the original books so its effect will not appear on the ledger and trial balance. Thus, such type of errors can not be located by trial balance.
2. ***Error of Commission:*** Such type of errors are found when one account is debited or credited in the place of another account. As cash received from Shyam ₹1,000 has been credited in the name of Ram. Such type of errors do not affect the agreement of the totals of the debit and credit side of the trial balance but they affect the result of the business.
3. ***Error of Principle:*** These errors occur when there is wrong classification between the capital and revenue nature incomes or expenditures. As the purchases of furniture of ₹20,000, are entered in the book of purchases while it should be in furniture account. Such errors can not be located by trial balance.
4. ***Compensating Error:*** When two errors of the same account occur and the effect of one error is compensated by the effect of other error it is called compensating error. For example, if purchase of ₹10,000 from Ajay is credited only by ₹1,000 while the purchases from Vijay for ₹1,000 is credited by ₹10,000. Thus, such type of errors do not affect on the agreement of the Trial Balance.

Errors which can be located by trial balance

The errors which affects the agreement of the totals of the Trial balance, can be located easily. These errors may be relating to:

1. Totals of the subsidiary books or ledger accounts.
2. Balancing of an account of the ledger.
3. Wrong posting of any amount in any account.
4. Posting of any account may be in the wrong side of the account.
5. Balance of any account may be omitted in writing in the Trial Balance.
6. Wrong total of the Trial Balance.

Suspense account

Notes

Sometimes, it is not possible to point out errors easily, then the difference is put to an account, known as suspense account. Suspense A/c is shown in the trial balance. As and when errors are located, the same is debited or credited for rectifying the error and the other account which is credited or debited is the suspense account. Thus, the suspense account is automatically closed.

Example:

Rectify the following errors:

1. A sale of goods to Raja Ram for ₹ 2500 was passed through the Purchases Book.
2. Salary ₹ 800 paid to Hari Babu was wrongly debited to his Personal Account.
3. Furniture purchased on credit from Mohan Singh for ₹ 1000 was entered in the Purchases Book.
4. ₹ 5000 spent on the extension of building was debited to the buildings repairs account.
5. Goods returned by Mani Ram ₹ 1200 were entered in Returns Outward Book.

Solution:

Journal Entries to rectify the errors

S. No.	Particulars	L.F.	(₹)	(₹)
1.	Raja Ram Dr.		5,000	
	To Purchases a/c			2500
	To Sales a/c			2500
	A sale of goods to Raja Ram through the Purchases book is rectified			
2.	Salary a/c Dr.		800	
	To Hari Babu			800
	Salary wrongly debited in his personal a/c is rectified.			
3.	Furniture a/c Dr.		1,000	
	To Purchases a/c			1000
	Furniture purchased was wrongly entered in the Purchases book is rectified.			
4.	Buildings a/c Dr.		5,000	
	To Buildings Repairs a/c			5000
	Spent on extension of building was wrongly debited to Building repairs a/c is rectified.			
5.	Returns Inward a/c (Sales Returns) Dr.			
	Returns Outward a/c (Purchases Returns a/c) Dr.		1,200	
	To Mani Ram		1,200	
	Goods returned by Mani Ram were entered in returns outward book.			2400

Notes

Caselet

Mr. Kamal Nath was doing a business as a cloth merchant. On 1st July, 2009 his assets were: Furniture and Office Equipment = ₹ 12,500, Stock ₹ 1,25,000 Cash in Hand ₹ 3,000, Bank Balance ₹ 42,500, Amounts due from Brijesh ₹ 6,000, Amount due from Girijesh ₹ 7,500. On the date he owed ₹ 10,000 to Manish and ₹ 7,250 to Naresh. His transactions during the month were as follows:

2009		₹
July 2	Sold cloth on credit to Xavier	2,500
July 3	Purchased cloth from Yogesh	10,000
July 4	Paid Rent by cheque	4,000
July 5	Purchase of cloth by cheque	10,000
July 7	Cash sales	2,250
July 8	Received cheque from Brijesh	5,900
	allowed him discount	100
July 9	Paid for stationery	250
July 10	Drawn cash for private use	1,250
July 11	Purchased cloth on credit from Manish	12,500
July 12	Sent cheque to Manish (in full settlement for July 1 transactions)	9,750
July 13	Sold cloth on credit to Girijesh	9,000
July 14	Paid telephone charges	400
July 15	Cash Sales	1,500
July 18	Paid for Advertisement	1,750
July 19	Cash Purchases	3,000
July 30	Paid Salaries for July	4,000

You have to journalise these transactions and from that information prepare his Ledger.

2.9 Summary

- Journal is the first book of the original entries in which all the business transactions of the financial nature are recorded, then posted to ledger accounts.
- Accounts are of three types – Personal, Real and Nominal Account.
- The law of entire business revolves around only on mutual agreement sharing policy among the players.
- A Personal Account is an account which deals with a due balance either to or from these individuals on a particular period.
- Real Accounts is the account especially deals with the movement of assets.
- Nominal Account is an account deals with the amount of expenses incurred or incomes earned.
- It includes all expenses and losses as well as incomes and gains of the enterprise.

Notes

- Ledger is nothing but preliminary book of accounting transactions at which, each account is separately maintained through the allotment of various pages for exclusive recording.
- Posting is the process of selecting of transactions from Journal on the basis of accounts and writing them into ledger accounts.

2.10 Keywords

Bill of Exchange: A bill of exchange is an unconditional order signed by the maker which directs the recipient to pay a fixed sum of money to a third party at a future date.

Golden Rules: These are fundamental rules for the entry of recording the financial transactions in accordance with the duality concept.

Journal: The primary book in which the business transactions are recorded at first time.

Ledger: It is the classification of accounts in which various accounts are maintained.

Nominal A/c: Accounts which are relating to the revenues, incomes, expenses and losses of the business are called nominal accounts.

Personal A/c: Accounts which are related to person, firms, companies and representatives.

Process of Accounting: It includes the recording of transactions into Journal, classifying into Ledger and summarizing into Trial Balance and Final Accounts.

Real A/c: Accounts which are related to all the assets accounts are included into it.

2.11 Self Assessment

Fill in the blanks:

1. Capital is a ……
2. Drawings are a ……
3. Furniture is a ……
4. State Bank of India is a ……
5. Rent paid is a ……
6. Journal is a …… of original entries for accounting data.
7. The journal is known as the …… .
8. The process of transferring the entries from Journal to Ledger accounts is called ……
9. …… is a statement which shows balances of all accounts on a particular date.
10. The balances of all the liabilities and capital accounts are recorded in the …… of the Trial Balance.
11. The balances of all incomes and gains are disclosed in the …… of the Trial Balance.

Notes

Choose the correct Answer

12. Outstanding rent A/c is an example for:
    (a) Nominal account
    (b) Personal account
    (c) Representative personal account
    (d) None of these
13. The giving aspect in a transaction is called as:
    (a) Debit aspect
    (b) Credit aspect
    (c) Neither of the two
    (d) Both of them

2.12 Review Questions

1. Pass the following various journal entries:
    (a) Jan. 1, 2009 Mr. Sundar has started business with a capital of ₹ 50,000
    (b) Jan. 2, 2009 Goods purchased ₹ 10,000
    (c) Jan. 5, 2009 Goods sold ₹ 5,000
    (d) Jan. 10, 2009 Goods purchased from Mittal & Co. ₹ 10,000
    (e) Jan. 11, 2009 Goods sold to Ganesh & Co. ₹ 10,000
    (f) Jan. 12, 2009 Goods returned to Mittal & Co ₹ 1,500
    (g) Jan. 20, 2009 Goods returned from Ganesh ₹ 2,000
    (h) Jan. 31, 2009 Office Rent paid ₹ 500
    (i) Feb. 2, 2009 Interim Dividend paid ₹ 3000
    (j) Feb. 8, 2009 Cash withdrawn from bank ₹ 2,000
2. Your purchases 10 Furniture from other company, your starting own furniture business. Each furniture value is ₹ 1000/-, your business purpose use two furniture and other furniture are sales purpose. What will be the Purchases Entry?
3. Distinguish between material and immaterial transactions of business.
4. The ledger of Salizar Company at the end of the current year shows Accounts Receivable $110,000, Sales $840,000, and Sales Returns and Allowances $40,000. If Allowance for Doubtful Accounts has a credit balance of $2,500 in the trial balance, journalize the adjusting entry at December 31, assuming bad debts are expected to be
    (a) 1% of net sales, and
    (b) 10% of accounts receivable.
5. Which A/c will you put goodwill in, what about commission received and why?
6. What would you debit/credit the rent and rates paid? Give reasons.

Notes

7. The following balances are extracted from the books of Mr. Rakesh as on 31.12.2010.

	₹		₹
Capital	15,000	Purchases	7 ,200
Land & Building	15,600	Provision for bad debts	370
Bank overdraft	2,500	Sales	17,000
Cash in hand	680	Wages	1250
Stock in Trade as on 1.1.04	6,000	Salaries	700
Advertisement	210	Insurance	40
Rent & Taxes	160	Discount allowed	300
Interest & Discount received	300	Repairs to building	210
Debtors	6420	Creditors	4,100
		General Expenses	500

Prepare a trial balance.

8. Compose three columns Cash Book from the following transactions:

2009		₹
Jan. 1	Cash in hand	567
Jan. 1	Cash at bank	12,675
Jan. 2	Received from Ashish and	7,900
	Allowed him a discount	100
Jan. 4	Deposited into the bank	5,000
Jan. 6	Furniture purchased for cash	2,500
Jan. 7	Paid to Vikas by cheque	7,800
	And received discount	200
Jan. 14	Received from Manish by cheque and Deposited into bank	5,000
Jan.16	Cash Sales	8,000
Jan. 20	Deposited into bank	6,000
Jan. 25	Purchased a Machine and paid by a cheque	12,000
Jan. 26	Paid by cheque to Kishore	1,370
	and received discount	30
Jan. 27	Withdrew from bank for office use	2,500
Jan. 28	Purchased goods for cash	5,000
Jan. 29	Paid wages by cheque	4,500
Jan. 31	Paid Rent	500

Hint: Closing Balance of Cash ₹ 467, Closing Balance of Bank ₹ 105

9. What advantage do you see in the double entry system?

10. Explain the recording of cash and non-cash transactions.

Notes

Answers: Self Assessment

1.	Personal	2.	Personal
3.	Real	4.	Personal
5.	Nominal	6.	Primary Book
7.	Book of Original Entry	8.	Posting
9.	Trial Balance	10.	Credit side
11.	Credit side	12.	(a)
13.	(a)		

2.13 Further Readings

Books

Khan and Jain, "*Management Accounting*".

M. P. Pandikumar, "*Accounting & Finance for Managers*", Excel Books, New Delhi.

R. L. Gupta and Radhaswamy, "*Advanced Accountancy*".

S. N. Maheswari, "*Management Accounting*".

V. K. Goyal, "*Financial Accounting*", Excel Books, New Delhi.

Online link

www.futureaccountant.com

Notes

Unit 3: Sub-division of Journals

CONTENTS

Objectives

Introduction

3.1 Classification of Subsidary Books

3.2 Cash Book

3.3 Purchases Day Book

3.4 Sales Day Book

3.5 Purchase Returns Book

3.6 Sales Returns Book

3.7 Bills Receivable Book

3.8 Bills Payable Book

3.9 Summary

3.10 Keywords

3.11 Self Assessment

3.12 Review Questions

3.13 Further Readings

Objectives

After studying this unit, you will be able to:

- Discuss the concept of subsidary books
- Describe the classification of subsidiary books

Introduction

If the transactions of the enterprise are voluminous, to ease the process of posting the transactions, they should be classified into two categories. The transactions are segmented, one on the basis of regular and another on the basis of non-regular occurrence.

The regular/frequent occurrence of transactions are recorded only in the separate books which are known as subsidiary book of accounts or subsidiary journals, instead of being recorded in the regular journal. The infrequent transactions are recorded/posted in the original journal or journal proper which do not have any specific subsidiary journal or subsidiary books.

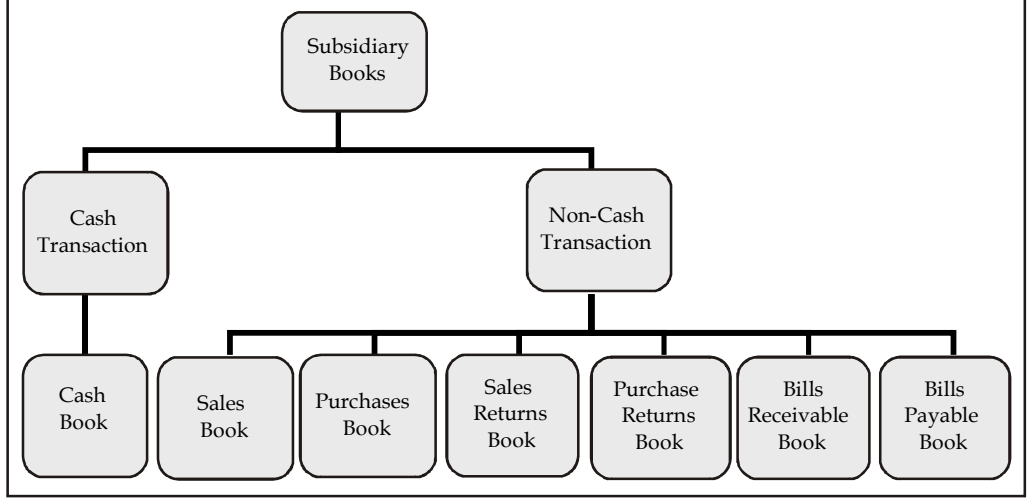
The subsidiary journals or books are developed by the firms based only on the occurrence of the transactions. Normally the frequent occurrence of the transactions of the firm is a major part of the subsidiary books of the accounting system.

Notes

3.1 Classification of Subsidary Books

The following are the subsidiary books on the major frequent occurrence of transactions.

Figure 3.1



Subsidiary books are classified on the basis of transactions viz Cash transactions and Non-cash-transactions.

Did u know? **What is meant by the Non-cash transaction?**

A Non-cash transaction is a transaction in terms of credit and conditions of the enterprise.

The Non-cash transactions shall include the following transactions of the enterprise, which do not involve any cash; they are as follows:

1. Credit sales Book
2. Credit purchases Book
3. Credit Sales Return Book
4. Credit Purchases Return Book
5. Bills Payable Book- Outcome of Credit transaction, and
6. Bill Receivable Book - Outcome of Credit transaction

3.2 Cash Book

Cash book is the book of accounts where most of the transactions are generally related with the receipts and payment of cash. It may be either purchase of goods for cash or sale of goods for cash or it may be either payment of expenses or receipts of income. All such transactions are recorded separately in a book, which is known as the cash book. This book is helpful in telling the accurate balance of cash in hand or at bank. All cash transactions are directly entered into the cash book and on the basis of cash book, ledger accounts are prepared.

Kinds of Cash Book

Notes

Generally, four types of cash book are prepared. These are:

1. Simple cash book with one column
2. Cash book with discount column also known as two columns cash book
3. Cash book with Bank and discount column also known as three columns cash book
4. Petty Cash Book

Simple Cash Book

Simple cash book is also known as one column cash book. This is just like cash account where all the transactions relating to receipts and payments of cash are recorded. All the receipts are shown on the debit side of the account which is on the left-hand side whereas all the payments are put on the credit side of the account which is on the right-hand side. This Cash Book is used only by such columns where neither discount is offered or accepted nor any cheque is issued or accepted. If the above type of situation arises, then recording is done in a separate book known as the journal.

The following is the proforma of simple cash book.

Simple Cash Book

Dr. **Cr.**

Date	Particulars (Receipts)	L.F.	Amount (₹)	Date	Particulars (Payments)	L.F.	Amount (₹)

The first column of cash book is meant for date of transaction whereas second column is meant for receipts of cash and third column is meant for noting the page No. of account in the ledger folio and fourth column is meant for amount. Similarly column 5 again is for date, column 6 for payments of cash, column 7 for ledger folio and column 8 for amount.

Balancing of Cash Book

The Cash Book is closed like any other accounts by taking a balance if the receipts are more than payments and if it is there it is a debit balance to be shown on the credit side of the account as balance c/d and during next month or year it is shown on the debit side of the Cash Book as balance b/d.

Notes

Notes

1. C/d stands for Carried Down whereas b/d stands for Brought Down.
2. One thing which is very important to remember while recording a transaction in the Cash Book is that no distinction is adopted about capital or revenue nature of transactions i.e., all the transactions are recorded in the Cash Book.

Example: Prepare a cash book from the following:

2010		₹
June 1	Cash in hand	7,850
June 2	Cash Purchases	2300
June 3	Cash Sales	6,250
June 4	Wages paid in cash	25
June 6	Cash paid to Ram	1,220
June 7	Cash Received from Mohan	2260
June 8	Paid to a creditor in full Settlement of his account Amounting to Rs. 4500	4,410
June 9	Paid cartage	15
June 10	Issued a cheque to a creditor	11,500
June 11	Goods purchased from Arun on credit	2,750
June 14	Cash Sales	2,670
June 15	Goods sold to Amit on credit	6,500
June 17	Cash Sales of Rs. 7500 of which Rs 5700 were deposited In bank	
June 18	Received a cheque from Amit and deposited in a bank	2,500
June 24	Rent paid	500
June 29	Electricity paid	1,210
June 30	Cash purchases	2,450

Solution:

Cash Book

Dr. **Cr.**

Date	Particulars	L.F.	₹	Date	Particulars	L.F.	₹
2010				2010			
June 1	To Balance b/d		7,850	June 2	By Purchases a/c		2,300
June 3	To Sales a/c		6,250	June 4	By Wages a/c		25
June 7	To Mohan's a/c		2,260	June 6	By Ram's a/c		1,220
June 14	To Sales a/c		2,670	June 8	By Creditor's a/c		4,410
June 17	To Sales a/c		7,500	June 9	By Cartage		15
June 18	To Amit a/c		2,500	June 17	By Bank a/c		5,700
				June 18	By Bank a/c		2,500
				June 24	By Rent a/c		500
				June 29	By Electricity a/c		1,210
				June 30	By Purchases a/c		2,450
				June 30	By Balance a/c		8,700
July 1	To Balance b/d		29,030				29,030

Notes

Notes

1. Cheque issued on June 10 to a creditor is not recorded in the Cash Book.
2. Goods purchased from Arun on June 11 is also not recorded as per rule no credit transaction is recorded.
3. Similarly goods sold to Amit on credit is also not recorded.
4. Cheque received from a debtor is recorded treating it as cash received as it is banked immediately.

Cash Book with Discount Columns (also known as Two Columns Cash Book)

As the name suggests this Cash Book contains two additional columns for amounts i.e. (i) for cash receipts or payments, (ii) Discount allowed or received.

The discount is an incentive given or received for prompt payment. To record discount, one additional column on both the sides of the Cash Book is added. The Cash Book is termed as Cash Book with discount column because of recording of discount.

Notes Discount is of two types:

1. ***Trade Discount:*** It is given for increasing the volume of sales and it is adjusted in the invoice, hence no entry is passed in the books of the business, as it is always deducted from the catalogue price. It is usually allowed by a whole seller to a retailer.

   For example, if the printed price of a book is ₹ 200 and 10% is offered as a trade discount, then it is ₹ 20/- and the net price would be ₹ 180/- i.e., (₹ 200 – ₹ 20) accordingly entries are to be made by the seller as well as the buyer for ₹ 180 in their books.

2. ***Cash Discount:*** It is given for prompt payment, hence, it is recorded in the Cash Book. When discount is given for prompt payment, it is a loss, hence, it is to be shown on the debit side of the Cash Book whereas discount received is to expedite payment to the outsiders, hence, it is shown on the credit side of the Cash Book.

No balance of discount columns is taken, simply the total of both the sides is given.

The following is the form of Double Columns Cash Book.

Double Columns Cash Book

Dr. **Cr.**

Date	Receipts	L.F.	Discount (₹)	Cash (₹)	Date	Payment	L.F.	Discount (₹)	Cash (₹)

Notes

Recording of Transactions in the Double Columns Cash Book

As and when some incentive is offered for prompt payment, discount offered is a loss, hence, it is shown on the debit side of the Cash Book.

For example, Roop owes ₹ 1000 to M/s. Goyal Traders of Muzaffar Nagar. The firm offers a discount of 1% if payment is made within one month. Roop makes the payment within stipulated time. So he is offered ₹ 10 as discount and he makes the payment of ₹ 990 to the firm. The following entry is required to be passed in the Journal if no Cash Book is used in the books of M/s. Goyal Traders.

Dr. **Cr.**

Date	Particulars		L.F.	₹	₹
	Cash A/c	Dr.		990	
	Discount A/c	Dr.		10	
	To Roop				1000
	(Cash received and discount allowed.)				

If Cash Book is used, then both the accounts namely cash and discount are to be recorded on the debit side of the Cash Book. Similarly, if discount is received for making prompt payment then such items are to be recorded on the credit side of the Cash Book, i.e., amount received or paid in the Amount/Cash column and discount allowed/received in the discount column.

Cash Book with Bank and Discount Columns (Three Columns Cash Book)

This type of Cash Book is used by the big business organisations because (i) there are large number of transactions and (ii) receipts and payments are through cheques. Under this Cash Book three columns meant for (A) Discount, (B) Cash, and (C) Bank, are shown on both the sides of the Cash Book. Other columns remain as usual. This Cash Book contains three columns, hence it is termed as Three Column Cash Book.

Following is the form of Three Columns Cash Book:

Three Columns Cash Book

Date	Particulars	L.F.	Discount (₹)	Cash (₹)	Bank (₹)	Date	Particulars	L.F.	Discount (₹)	Cash (₹)	Bank (₹)

Example: From the following particulars, write up the Cash Book of M/s K.K. of Chennai with Cash and Bank columns and bring down the final balance.

2009		₹
Oct. 1	Cash in hand	100
Oct. 1	Cash at bank	3,500
Oct. 5	Paid salary by cheque	250
Oct. 7	Paid to K.K. & Co. by cheque	260
Oct. 9	Received a cheque from B & Co.	2,500
Oct. 12	Bought goods for cash paid by cheque	750
Oct. 15	Received cash from M/s. S. Chand	1,500

Contd...

Notes

Oct. 17	Deposited cash into bank	1,450
Oct. 18	Sundry creditors were paid by cheque	1,250
Oct. 19	Received from debtors by cheque which could not be sent to bank	1,780
Oct. 20	B & Co. cheque dishonoured	2,500
Oct. 22	B & Co. paid cash	2,500
Oct. 24	R & Co. issued a cheque for Rs. 470 in full satisfaction of his account for	500
Oct. 27	Shyam lal was paid Rs. 395 in full settlement of his A/c amounting to	400
Oct. 31	Deposited into the Bank	2,200

Solution:

Three Columns Cash Book

Date	Particulars	L.F.	Discoun (₹)	Cash (₹)	Bank (₹)	Date	Particulars	L.F.	Discount (₹)	Cash (₹)	Bank (₹)
2009						2009					
Oct. 1	To Balance b/d			100	3,500	Oct. 5	By Salaries A/c			–	250
Oct. 9	To B & Co.			–	2,500	Oct. 7	By K & Co.			–	260
Oct. 15	To S. Chand			1,500		Oct. 12	By Purchase A/c			–	750
Oct. 17	To Cash A/c	(C)		–	1450	Oct. 17	By Bank A/c	(C)		1450	–
Oct. 19	To Debitors			1,780	–	Oct. 18	By S. Creditors			–	1250
Oct. 22	A/c			2,500	–	Oct. 20	By B & Co.			–	2,500
Oct. 24	To B & Co.		30		470	Oct. 27	By Shyam Lal		5	395	
Oct. 31	To R & Co.	(C)			2,200	Oct. 31	By Bank A/c	(C)		2,200	
	To Cash A/c						By Balance c/d			4,885	5,110
			30	5,880	10,120				5	5,880	10,120

Petty Cash Book

The Petty Cash Book records all the transactions which are very small in terms of money. In such situation, a fixed amount of cash in the beginning of the month is given to a person who is known as petty cashier. After a fixed period say a week or month, he is again reimbursed or paid back the amount whatever he has spent at the end of week or period. Such a system is known as imprest system.

Thus, this type of system (the Imprest System) is very useful. It contains one column to record the receipt of cash to be taken from the head cashier and other column to record payments of various counts. All such payments are to be totalled to know the total amount spent, so that necessary accounts be debited. The following is the proforma of Petty Cash Book:

Analytical Petty Cash Book

Receipts (Rs.)	Date	Particulars	Voucher No.	Total Amount (₹)	Printing & Stationery	Cartage	Postage

Example: Enter the following transactions in Analytical Petty Cash Book.

Notes

2009		₹
Jan. 1	Received cheque from head cashier	100.00
Jan. 2	Paid for postage and telegram	15.00
Jan. 3	Stationery purchased	5.00
Jan. 14	Paid for cartage	8.00
Jan. 18	Paid for travelling	7.00
Jan. 27	Tea for guests	6.00
Jan. 29	Office cleaning charges	12.00
Jan. 30	Paid for carriage	4.00
Jan. 31	Telegram charges	8.00

Solution:

Analytical Petty Cash Book

Receipts	Date	Particulars	Voucher No.	Total Amount	Postage telegram	Stationary	Cartage Travelling	Tea & office expenses
₹	2009			₹	₹	₹	₹	₹
100.00	Jan. 1	To cash a/c		–				
	Jan. 2	By Postage & telegram		15.00	15.00	–	–	–
	Jan. 3	By Stationery		5.00	–	5.00	–	–
	Jan. 14	By Cartage		8.00	–	–	8.00	–
	Jan. 18	By Travelling		7.00	–	–	7.00	6.00
	Jan. 27	By Tea for guest		6.00	–	–	–	12.00
	Jan. 29	By office cleaning charges		12.00	–	–	–	–
	Jan. 30	By Carriage		4.00	–	–	–	–
	Jan. 31	By Telegram		8.00	8.00	–	4.00	
		By Balance c/d		65.00 35.00	23.00	5.00	19.00	18.00
		Total		100.00				
100.00	Feb. 1							
35.00	Feb. 1							
65.00		To Balance b/d						
100.00		To Cash						

3.3 Purchases Day Book

All credit purchases are recorded in this book which are either used for resale or raw materials used for production. The purchases which are made for cash are not at all recorded in this book. Similarly, the assets which are bought for running the business, are also not recorded such as machinery, furniture, etc. All these assets and cash purchases are separately recorded in the journal Cash Book. Following is the form of Purchases Day Book:

Notes

Purchases Day Book

Date	Particulars	Invoice No.	L.F.	Amount (₹)
I	II	III	IV	V

(a) Column is meant for date.

(b) Column is meant for writing details regarding name of supplier, name of articles purchased & number i.e., quantities.

(c) Invoice No.: An Invoice is given to the seller when purchases are made on credit

(d) Ledger Folio

(e) Amount of the purchase

Thus, all the credit purchases are totalled which give us the amount of total credit purchases made during the period.

3.4 Sales Day Book

The goods which are sold on credit are recorded in this book but if sales are made for cash or assets are sold either for cash or on credit, they are not at all recorded in this book, but are recorded either in the cash book or in the journal. The form of this book is similar to that of purchases book. Following is the form of Sales Day Book.

Date	Particulars	Invoice No.	L.F.	Details (₹)	Amount (₹)
I	II	III	IV	V	VI
	Details of goods-sold-trade discount if any total				

Thus, all the credit sales are totalled which give us the amount of total credit sales made during the period.

Invoice: An Invoice is given to the buyer when sales are made on credit.

3.5 Purchase Returns Book

This book is also known as Returns Outward Book. This book records all the returns to the suppliers which are made during the period. The return is of goods or raw materials purchased from the Suppliers and Return is on account of difference in quantity or quality. This book is used when the returns are in sufficient number. If returns are not much, then it may be recorded in the Journal. The form of Purchase Returns Book is similar to that of Purchase Day Book.

Form of Purchase Returns Book

Date	Particulars	L.F.	Debit Note No.	Amount (₹)
I	II	III	IV	V

Notes

Caution ***Debit Note:*** Whenever goods are returned to the supplier, a letter which is known as the debit note is also sent along with returned goods. The purpose of this note is to inform the supplier about this deduction or debit given to his account. This note contains the following particulars such as:

(a) Name and address of the supplier

(b) Description of the goods returned

(c) Rate and total value

(d) Invoice No., along with date

(e) Signature

3.6 Sales Returns Book

This is also known as Returns Inward Book. This book records all the transactions related to the return of goods by the customers. As and when goods are returned by the customers, a credit note is issued and the entry is made in this book. This book again contains the same columns which a Purchases Returns Book contains. There is only one difference i.e. in place of Debit Note No. the column is used to note the Credit Note No. The form of sales Returns Book is as follows:

Sales Returns Book

Date	Particular	Credit Note No.	L.F.	Amount (₹)
I	II	III	IV	V

Caution ***Credit Note:*** As and when goods are returned by the customers, a credit note is being sent to him. Credit note means that his account has been credited with the amount of goods return.

3.7 Bills Receivable Book

A bill of exchange accepted by a customer is called bills receivable. When bills are received from debtors and number of such bills received is larger (big) then such bills are recorded in a separate book, known as bills Receivable Book. All such bills are totalled for a particular period and are posted in the accounts of the debtors from whom such bills are received. Following is the form of Bills Receivable Book.

Bills Receivable Book

Date of Receipt	Date of Receipt	From Whom Received	Drawer	Acceptor	Endorser (s)	Date of Bill	Tenor or Terms of Bill	Due date	Where payable	L.F.	Cash Discount allowed	Amount of bill (₹)	Re-marks

Notes

3.8 Bills Payable Book

Where either purchases are made for credit or loans are taken, then Bills are issued which are termed as Bills Payable. The book in which these bills are recorded is termed as Bills Payable Book. All such Bills are totalled after a lapse of a certain period and are posted in the accounts of the creditors to whom such bills are issued. Following is the form of Bills Payable Book:

Bills Payable Book

Date	To Whom Payable	Term	Drawer	Acceptor	Endorser (s)	Due Date	Where payable	L.F.	Amount (₹)	Remarks

Task Prepare a Cash Book with Bank column only:

2009		₹
July 1	Balance at bank	10,000
July 4	Received a cheque from Pankaj	5,000
July 7	Issued a cheque to Rakesh	6,000
July 10	Received dividend by bank draft	2,000
July 15	Mukesh was paid by issuing a cheque	1,500
July 20	Deposited into bank	7,000
July 24	Interest collected by bank	200
July 28	Dividend collected by bank	500
July 31	Bank charges debited	800

Hint: Total of Cash Book ₹ 24,700, Closing Balance ₹ 16,400.

3.9 Summary

- The regular/frequent occurrence of transactions are recorded only in the separate books which are known as subsidiary book of accounts or subsidiary journals, instead of being recorded in the regular journal.
- Subsidiary books are classified on the basis of transactions viz Cash transactions and Noncash-transactions.

3.10 Keywords

Bill of exchange: A bill of exchange is an unconditional order signed by the maker which directs the recipient to pay a fixed sum of money to a third party at a future date.

Journal: The primary book in which the transactions are recorded first time.

Ledger: It is the classification of accounts in which various accounts are maintained.

Subsidiary book: It is a book maintained for routine transactions of the enterprise.

Trial Balance: Trial balance is a list in which all the balances of the accounts of Ledger are showed to test the arithmetical accuracy of the posting in ledger.

Notes

3.11 Self Assessment

Fill in the blanks:

1. Only ..... are recorded in the cash book.
2. Cash payments are recorded on the ..... of the cash book.
3. According to the rules of accounting, all the business transactions are firstly recorded in journal and then posted in .....
4. The ..... is an incentive given or received for prompt payment.
5. The ..... records all the transactions which are very small in terms of money.
6. An ..... is given to the buyer when sales are made on credit
7. Purchase return book is also known as .....

Choose the correct Answer

8. Cash book is to record the:
   (a) Cash receipts
   (b) Cash Payments
   (c) Both (a) & (b)
   (d) Cash receipts, payment, Bank Receipts, payments, Discount received and paid
9. Sales book is to record the:
   (a) The entire sales volume
   (b) The cash sales only
   (c) The credit sales only
   (d) The credit sales with the discounts
10. When equity (net assets) is subtracted from total assets the amount remaining is known as which of the following?
   (a) Total revenue
   (b) Total liabilities
   (c) Total expenses
   (d) Net income or net loss
   (e) All of the above

3.12 Review Questions

1. Illustrate the preparation of records for non cash transactions with suitable examples.
2. Explain the nature of petty cash book.
3. What is the difference between a petty cash book and a simple cash book?

Notes

4. Prepare a Cash Book form the transactions given below:

2006		₹
July 1	Balance at bank	10,000
July 4	Received a cheque from Pankaj	5,000
July 7	Issued a cheque to Rakesh	6,000
July 10	Received dividend by bank draft	2,000
July 15	Mukesh was paid by issuing a cheque	1,500
July 20	Deposited into bank	7,000
July 24	Interest collected by bank	200
July 28	Dividend collected by bank	500
July 31	Bank charges debited	800

5. Compose three columns Cash Book from the following transactions:

2006		₹
Jan. 1	Cash in hand	567
Jan. 1	Cash at bank	12,675
Jan. 2	Received from Ashish and	7,900
	Allowed him a discount	100
Jan. 4	Deposited into the bank	5,000
Jan. 6	Furniture purchased for cash	2,500
Jan. 7	Paid to Vikas by cheque	7,800
	And received discount	200
Jan. 14	Received from Manish by cheque and Deposited into bank	5,000
Jan.16	Cash Sales	8,000
Jan. 20	Deposited into bank	6,000
Jan. 25	Purchased a Machine and paid by a cheque	12,000
Jan. 26	Paid by cheque to Kishore	1,370
	and received discount	30
Jan. 27	Withdrew from bank for office use	2,500
Jan. 28	Purchased goods for cash	5,000
Jan. 29	Paid wages by cheque	4,500
Jan. 31	Paid Rent	500

6. What are the different types of trade bills books?

7. Write a short note on the following:

   (a) Debit Note

   (b) Credit Note

Notes

8. Enter the following transactions in Analytical petty Cash Book:

2006		₹
Jan. 1	Received cheque from head cashier	100.00
Jan. 2	Paid for postage and telegram	15.00
Jan. 3	Stationery purchased	5.00
Jan. 14	Paid for cartage	8.00
Jan. 18	Paid for travelling	7.00
Jan. 27	Tea for guests	6.00
Jan. 29	Office cleaning charges	12.00
Jan. 30	Paid for carriage	4.00
Jan. 31	Telegram charges	8.00

9. Make the proforma of purchase return book and sales return book and explain it.

10. Explain the significance of preparing subsidiary books of accounts.

Answers: Self Assessment

1.	cash transactions	2.	credit side
3.	ledger	4.	discount
5.	petty cash book	6.	Invoice
7.	Returns Outward Book	8.	(d)
9.	(c)	10.	(b)

3.13 Further Readings

Books

Khan and Jain, "*Management Accounting*".

M. P. Pandikumar, "*Accounting & Finance for Managers*", Excel Books, New Delhi.

R. L. Gupta and Radhaswamy, "*Advanced Accountancy*".

S. N. Maheswari, "*Management Accounting*".

V. K. Goyal, "*Financial Accounting*", Excel Books, New Delhi.

Online link

www.futureaccountant.com

Notes

Unit 4: Final Accounts

CONTENTS

Objectives

Introduction

4.1 Objectives of Preparing Final Accounts

4.2 Preparation of Final Accounts

4.2.1 Classification of Expenditures

4.2.2 Classification of Receipts

4.3 Trading and Profit & Loss Account

4.4 Balance Sheet

4.5 Summary

4.6 Keywords

4.7 Self Assessment

4.8 Review Questions

4.9 Further Readings

Objectives

After studying this unit, you will be able to:

- Define capital and revenue expenditure
- Prepare trading and Profit and Loss a/c
- Construct Balance Sheet

Introduction

In the present unit, you will study about the final accounts with adjustments. After studying this unit, you will be able to understand the trading and profit and loss account, balance sheet and key adjustments related to them. Every organisation prepares its final accounts after a particular period to know its financial results and financial position. Final accounts mean profit and loss account and the balance sheet. Profit and loss account also contains one more account, known as trading account, and if the business is manufacturing any item or article, then Manufacturing account is also there. All these accounts are prepared only after preparing trial balance.

4.1 Objectives of Preparing Final Accounts

You already know that final accounts are prepared at the end of a particular time period. The final accounts plays an important role for every kind of organisation. There are two main objectives of preparing final accounts: (1) to know the operational results i.e. final accounts are prepared to know the profit or loss during a particular period through the profit and loss account which is also known as income statement, and (2) to ascertain the financial position of the business on a particular date through the balance sheet, also known as position statement.

Notes

Did u know? There are two types of persons interested in financial statements: (1) Internal users, and (2) External users.

1. ***Internal Users:*** These are: (a) Shareholders, (b) Management, and (c) Trade unions employees, etc.

   (a) *Shareholders* are interested to know the welfare of the business. They can know the operational results through such financial statements and the financial position of the business.

   (b) *Management is* interested to take important decisions relating to fixing up the selling prices and making future policies.

   (c) *Trade unions and employees* are interested to know the operational results because their bonus, etc. is dependent on the profit earned by the business. Financial statements also help in their negotiations for wages/salaries.

2. ***External Users:*** The following are most important external users of financial statements:

   (a) *Investors:* They are interested to know the earning capacity of business which can be known through financial statements. They can also know the financial soundness of the business through financial statements.

   (b) *Creditors, Lenders of Money etc:* The creditors and lenders of money etc. can also know the financial soundness through financial statement. They have to see two things (i) Regularity of income and (ii) solvency of the business so that their investment is risk free.

   (c) *Government:* Government is interested to formulate laws to regulate business activities and also law relating to taxation, etc. Financial statements help while computing National Income statistics, etc.

   (d) *Taxation authorities:* Financial statements provide information relating to operational results as well as financial position of the business. Tax authorities decide the amount of tax as per financial statement. It is very useful to other taxation authorities such as sales tax, etc.

   (e) *Stock Exchanges* are meant for dealing in share/securities. Purchase and sale of such shares and securities are possible through stock exchanges which provide financial information about each company which is listed with them.

4.2 Preparation of Final Accounts

The profit and loss account and the balance sheet are, together popularly known as the final accounts. The profit and loss account is prepared to show the financial results of a business and the balance sheet is prepared to show the financial position. To calculate the accurate amount of profit or loss, it is a must that there should be a recognisation of the revenues and expenditures. If there is a wrong recognisation of expenses or revenues, results of the business will also be wrong. Thus, the distinction between the capital and revenue items is very important.

There are two types of expenses and two types of incomes which are classified as:

1. Revenue expenditure/Revenue receipts
2. Capital expenditure/Capital receipts

Notes

4.2.1 Classification of Expenditures

Expenditures of a business are classified into following three categories:

1. ***Capital expenditure:*** If an expenditure is incurred in the business to get its benefit for a long period, such expenditure is called capital expenditure.

Example: Expenditure to acquire a fixed asset as purchase of plant and machinery, land and buildings and furniture, etc.

2. ***Revenue expenditure:*** When an expenditure is done for a short period (less than one year) and for the regular operation of business, it is termed as revenue expenditure. Its benefit are taken by the business in the current period only.

Example: Expenses incurred during the normal course of business – as salaries of the staff, fuel and electricity used for the running of machinery and cost of sales.

3. ***Deferred revenue expenditure:*** When revenue expenditure is done for the benefit of two or three years, it is termed as deferred revenue expenditure.

Example: cost of heavy campaign of advertisement, preliminary expenses, etc. The benefit of such type of expenditure is enjoyed by the company for a number of years.

4.2.2 Classification of Receipts

Receipts of a business are classified into following categories:

1. ***Capital receipts:*** Capital receipts include the sale of fixed assets, long-term investments, issue of share capital, debentures and loan raised. Capital receipts are different from the capital profits or loss. The entire amount from the sale of assets is called capital receipts and the difference of sale proceeds and cost of assets is capital profit or loss.

2. ***Revenue receipts:*** Receipts which are obtained during the normal course of business are called revenue receipts. In other words, the receipts which are not capital receipts are revenue receipts as sale of goods.

Example: goods worth ₹ 5,000 are sold at ₹ 6,000. Here, the entire sale of ₹ 6,000 will be revenue receipts and the revenue profit will be ₹1,000 only.

4.3 Trading and Profit & Loss Account

In the Trading and Profit & Loss Account all those accounts are disclosed which affect the profit or loss of the business. In other words, all the nominal accounts of the Trial Balance are used to prepare the Trading and Profit & Loss Account. In the left hand side, all the expenses incurred during a period and in the right hand side all the incomes earned during a period are disclosed. This account contains two parts:

1. Trading Account

2. Profit & Loss Account

Notes

Trading account

Trading account is the comparison of sales and purchase. This account is prepared to determine the amount of gross profit or gross loss on sales. The proforma of Trading Account is given below:

Pro forma of Trading Account
In the Books of …….
Trading Account
(for the year ending …….)

Particulars		Dr. Amount (₹)	Particulars		Cr. Amount (₹)
To Opening Stock		-------	By Sales	---------	
To Purchases	---------		Less: Returns	----------	-------
Less: Returns	---------	-------	By Closing stock		-------
To Wages & Salaries		------	By Gross Loss (if any)		
To Carriage Inwards		-------	Transferred to P/L A/c		-------
To Cartage		------			
To Freight		-------			
To Light Power & Heating in factory					
To Factory Insurance		------			
To Works Manager's Salary		-------			
To Foreman's Salary		------			
To Factory Rent & Taxes		-------			
To Motive Power		------			
To Factory Repairs		-------			
To Factory Expenses		------			
To Octroi duty		-------			
To Custom Duty		------			
To Manufacturing Exps.		-------			
To Consumable Stores		------			
To Gross Profit		-------			
Transferred to P/L A/c.		------			
		------			-------

Notes

- There is no particular proforma of the Trading Account. The above proforma given is traditional one. That is not as per law. Here the students are advised to follow this proforma.
- If the total of credit side is more than the total of debit side, difference is called gross profit or vice versa gross loss.

Notes

Example: Prepare trading account of M/s Sundar and Sons as on 31st March 2010

	₹
Opening stock on 1st April 2009	50,000
Purchases	
Cash	1,20,000
Credit	1,00,000
Sales	
Cash	40,000
Credit	1,00,000
Purchase Returns	20,000
Carriage Inwards	10,000
Marine insurance on purchase	6,000
Other direct expenses	4,000
Sales Returns	30,000
Stock as on 31st March 2010	10,000

In this problem, return outwards and inwards are given in addition to cash and credit purchases and sales of a firm to find out the net purchases and the net sales of the firm.

Net Sales = Cash Sales+ Credit Sales – Sales Returns

Net Purchases = Cash Purchases + Credit Purchases – Purchase Returns

Solution

Trading Account for the year ended 31st March 2010

Dr Cr

Particulars		₹	**Particulars**		₹
To Opening Stock		50,000	By Cash Sales	40,000	
To Cash Purchase	1,20,000		Add: Credit Sales	1,00,000	
Add: Credit Purchase	1,00,000		By Total Sales	1,40,000	
To Total Purchase	2,20,000		Less: Sales Return	30,000	
Less: Purchase Return	20,000		By Net Sales		1,10,000
To Net Purchase		2,00,000	By Closing Stock		10,000
To Carriage Inwards		10,000	By Gross Loss c/d		1,50,000
To Marine Insurance		6,000			
To Other Direct Expenses		4,000			
		2,70,000			2,70,000
To Gross Loss B/d		1,50,000			

Gross Loss is due to an excess of the debit side total over the credit side total.

Notes

Task Calculate the Gross Profit from the following:

	₹
Opening stock	11,500
Purchases	1,05,000
Wages	3,500
Sales	1,40,000

Hint: ₹ 20,000

Profit & Loss Account

Profit & Loss Account is the second part of Trading and Profit & Loss Account. Trading Account shows the gross profit which is the difference of sales and cost of sale. Thus the gross profit can not treated as net profit while the businessman wants to know how much net profit he has earned from the operating activities during a period. For this purpose Profit & Loss Account is prepared keeping in mind all the operating and non-operating incomes and losses of the business. In the debit (left hand side) side all the expenses and losses are disclosed and in the credit side (right hand side) all the incomes are disclosed. The excess of credit side over debit side is called net profit while the excess of debit side over credit side shows net loss. Net profit increases the net worth of the business, therefore, it is added to the capital of owner. Net loss decreases the net worth of business so it is subtracted from capital. The proforma of Profit & Loss Account is given below:

Proforma of Profit & Loss Account

Particulars	₹	Particulars	₹
To Gross Loss (if any) transferred from Trading Account	–	By Gross Profit (transferred from Trading Account)	–
To Staff Salaries	–	By Discount Received	–
To Office Rent	–	By Commission Received	–
To Rates & Taxes	–	By Dividend	–
To Office Lighting and Heating	–	By Interest Received	–
To Printing & Stationary	–	By Rent from Tenant	–
To Bank Charges	–	By Interest from Bank	–
To Insurance	–	By Interest on Drawings	–
To Telephone Charges	–	By Profit on Sale of Investment	–
To Legal Expenses	–	By Provision for Discount on Creditors	–
To Repairs	–	By Bad Debts recovered	–
To Postage & Stamps	–	By Profit on Sale of Assets	–
To Trade Expenses	–	By Other Incomes	–
To Establishment Exps.	–	By Net Loss (if any) transferred to Capital A/c	–
To Audit Fees	–		
To Charity & Donations	–		
To Management Exps.	–		

Contd...

Notes

To Depreciation on	–		
Land & Buildings	–		
Plant and Machinery	–		
Furniture	–		
To Stable Expenses	–		
To Directors Fee	–		
To Bank Charges	–		
To Interest on Loan	–		
To Interest on Capital	–		
To Discount on B/R	–		
To Sales Tax	–		
To Advertisement	–		
To Bad Debts	–		
To Agents' Commission	–		
To Travelling Expenses	–		
To Free Samples distributed	–		
To Warehouse Expenses	–		
To Packing Expenses	–		
To Brokerage	–		
To Distribution Expenses	–		
To Delivery Van Expenses	–		
To Provision for Bad and Doubtful Debts	–		
To Entertainment Expenses	–		
To Carriage Outword	–		
To Loss on Sale of Assets	–		
To Licence Fees	–		
To Repairs of Assets & Motor Car			
To Loss by Fire			
To Conveyance Expenses			
To Net Profit (Transferred to Capital A/c.)			
	–		–

Example: From the following information, prepare the Profit & Loss account.

	Debit	Credit
	₹	₹
Gross profit from the trading account	1,00,000	
Manager Salary	30,000	
Office lighting	5,000	
Office Rent	15,000	

Contd...

Notes

Local Taxes	1,000	
Salary paid to salesmen	20,000	
Commission charges paid	10,000	
Legal charges paid	3,000	
Bad debts	1,500	
Advertising charges	25,000	
Package charges	7,500	
Discount allowed	3,000	
Discount received		4,000
Dividend received		2,000
Rent received		1,000
Depreciation charges	10,000	
Repairs and Maintenance	2,500	
Interest on loans	1,500	500

Dr **Profit and loss account for the year ended .....** **Cr**

Particulars	₹	Particulars	₹
To Manager Salary	30,000	By Gross profit B/d	1,00,000
To Office lighting	5,000	By Discount received	4,000
To Office Rent	15,000	By Dividend received	2,000
To Salary paid salesman	20,000	By Rent received	1,000
To Commission charges	10,000	By Interest received	500
To Legal charges	3,000	By Net Loss c/d*	24,500
To Bad debts	1,500		
To Advertising charges	25,000		
To Package charges	7,500		
To Depreciation charges	10,000		
To Repairs and maintenance	2,500		
To Interest on loan	1,500		
To Local taxes	1000		
	1,32,000		1,32,000

* Net loss is the excess of the expenses total in the debit side ₹24,500 over the incomes total in the credit side of the profit and loss account.

Task Calculate the cost of materials consumed from the following:

Opening Stock	₹
Raw materials	4,500
Work in Progress	12,000
Finished Goods	14,800
Sales	50,000
Purchases during the year	24,500
Carriage inwards	500
Closing stock – raw materials	1,500
Work in Progress	4,800
Finished Goods	2,700

Hint: ₹ 28000

Notes

4.4 Balance Sheet

After the determination of the net profit of the business through the Trading and Profit and Loss Account, the businessman wants to know the financial position of the business. For this purpose he prepares a statement which is called the Balance Sheet. The Balance Sheet depicts the financial position of the business on a fixed date. A Balance Sheet is prepared with those balances of Trial Balance which are left out (Personal and Real accounts) after taking out the nominal accounts' balances to prepare the Trading and Profit and Loss Account. A Balance Sheet has two sides – assets side and liabilities side. The assets and liabilities are shown in a particular order.

Marshalling of Assets and Liabilities

Order of presenting the assets and liabilities in the Balance Sheet is called marshalling of assets and liabilities. A balance sheet may be prepared by marshalling the assets and liabilities in the following orders:

Balance Sheet prepared in Liquidity Order

Here liquidity means conversion of assets into cash. When a Balance Sheet is prepared on the basis of liquidity order, more easily convertible assets into cash are shown first and those assets which can not be easily converted into cash are shown later and so on. In the case of liabilities, first those liabilities are shown which are payable earlier and then those liabilities are shown which are payable later. The proforma of such a Balance Sheet is given below:

Proforma of Balance Sheet in Order of Liquidity

(as on .....)

Liabilities		₹	Assets	₹
Current Liabilities			**Current Assets**	------
Sundry Creditors		------	Cash in Hand	
Bank Overdraft		------	Cash at Bank	------
Short-term Loan		-----	Short-term Investment	------
Outstanding Expenses		-----	Prepaid Expenses	------
Unaccrued Income		-----	Bills Receivable	------
Bills Payable		-----	Accrued Incomes	------
Long-term Liabilities			Debtors	------
Capital	----------		Closing Stock	------
(+) Net Profit	----------		**Fixed Assets**	
	----------		Land & Building	------
(–) Drawings	----------	----	Plant & Machinery	------
Long-term Loans		----	Furniture	------
Contingent Liabilities			Investments (Long-term)	------
	----------		Goodwill	------
	----------		Patents & Trademarks	------
			Livestock	------
		-------		-------

Notes

Balance Sheet prepared in Permanency Order

Balance Sheet prepared under this order is the reverse of the Balance Sheet prepared in liquidity order. In this case first those assets are shown which are more permanent means fixed assets and then less permanent assets (Current Assets) are shown. Similarly, first long-term liabilities (more permanent) are shown then less permanent (short-term on current) liabilities are shown. The proforma of such type of Balance Sheet is given below:

Proforma of Balance Sheet in Permanency Order

(as on .....)

Liabilities		₹	Assets	₹
Long-term Liabilities			**Fixed Assets**	
Capital	------		Land & Building	-----
(+) Net Profit	------		Plant & Machinery	-----
	------		Furniture	-----
(–) Drawings	------	------	Long-term Investment	-----
Long-term Loans		------	Goodwill	-----
Current Liabilities			Patents & Trademarks	-----
Sundry Creditors		------	Livestock etc.	-----
Bank Overdraft		------	**Current Assets**	
Bill Payable		------	Closing Stock	-----
Short-term Loan		------	Debtors	-----
Outstanding Expenses		------	Accrued Incomes	-----
Un-accrued Incomes		------	Prepaid Expenses	-----
			Bill Receivable	-----
			Short-term Investments	-----
			Cash in Bank	-----
			Cash in Hand	-----
		------		-----

Adjustment Entries

If the accountant finds that some transactions are not incorporated (making proper accounting) in the books or wrongly incorporated in books, to complete the records and rectifying the errors done, some adjustments are made. They are called adjustment entries. Usually adjustment entries are made in the books before preparing the final accounts for the following items:

1. ***For Outstanding Expenses of the Business***

   Outstanding Expenses: All those expenses which are not paid in the related accounting period are termed as outstanding expenses.

   Example: If a company has to pay ₹ 4000 as rent for the accounting period 31.03.2009 - 31.03.2010 but the company had paid ₹ 3000 only then the balance ₹ 1000 will be treated as outstanding expense. The following general entries will be passed:

   Relating Expenses Account Dr.

   To Outstanding Expenses Account

Notes

The outstanding expenses at the time of preparation of final account are shown in the liability side of the balance sheet and on the other hand, it is added in the relating expenses in the Trading and Profit & Loss Account.

Example: Rent of the office is ₹ 22,000 for 11 months only. The enterprise has failed to remit the payment of last month's rent amounting ₹ 2,000. According to mercantile system of accounting, the rent of the office, whether fully paid or not, should be totally considered for the entire duration to determine the income of the enterprise.

Finally, what is to be done ? The amount of actual rent should be added with the rent which has not been paid by the enterprise i.e. (₹ 22,000 + ₹2,000 = ₹ 24,000).

Treatment of the transaction

Debit the expense account

Credit the liability i.e. expense outstanding A/c to which the amount is to be paid.

Rent which is initially paid amounted ₹22,000.

The journal entry of the first transaction is:

Dec 31,2005	**Rent A/c Dr**	**22,000**	
	To Rent O/s A/c Cr		22,000
Being cash paid as rent			

The rent which is not yet paid of ₹2,000 to Ganesh.

The journal entry for the outstanding rental amount is as follows:

Feb 2, 2006	**Rent A/c Dr**	**2,000**	
	To Rent O/s A/c		3,000
Being the rent not paid to be treated as liability			

How many number of accounts got affected ?

(i) Rent A/c

(ii) Cash A/c

(iii) Liability A/c- Responsibility to pay to Rent O/s A/c

Post the journal entries, to understand the effect in the various ledger accounts of the transaction involved.

Dr **Cash A/c** **Cr**

Date	Particulars	₹	Date	Particulars	₹
Dec 31	To Balance c/d	22,000		By Rent	22,000
		22,000			22,000
				By Balance B/d	22,000

Dr **Rent O/s A/c** **Cr**

Date	Particulars	₹	Date	Particulars	₹
	To balance c/d	2,000	Dec 31	By Rent	2,000
		2,000			2,000
				By balance c/d	2,000

Notes

Dr **Rent A/c** **Cr**

Date	Particulars	₹	Date	Particulars	₹
Dec 31 Dec 31	To Cash To Rent O/s	22,000 2,000		By Balance c/d	24,000
		24,000			24,000
	To balance c/d	24,000			

Total amount of the rent for 12 months in a year

= Amount of Rent paid for 11 months + Rent outstanding for one month

= ₹ 22,000 + ₹ 2,000

= ₹ 24,000

This has to be applied for all the outstanding expenses.

The effect of adjustments in the P & L A/c and Balancesheet

Dr **Profit and Loss account for the year ended……..** **Cr**

	₹		₹
To Rent paid	22,000		
Add Rent O/s to (Ganesh)	2,000		
To total rent	24,000		

Balance sheet as on dated……..

Liabilities	₹	Assets	₹
Rent O/s (Ganesh)	2,000		

2. ***For Prepaid Expenses of the Business***

Prepaid expenses: The benefit of some expenses already spent will be available in the next accounting year, Such a portion of the expense is called pre-paid expense.

Example: Rent paid in advance for the next accounting year.

Prepaid Expenses Account Dr.

To Relating Expenses Account

The prepaid expenses are disclosed in the assets side of the Balance Sheet and on the other hand, it will be subtracted from the relating expenses in the debit side of Trading and Profit & Loss Account.

The non-life insurance premium of the firm is ₹100 p.m. Since 1st April, 2005, it has paid the premium of ₹1,500 upto June, 2006.

For a year, the firm is expected to make the payment of ₹1,200 for 12 months, but has paid ₹300 additionally for the next three months. As far as ₹300, the firm has not availed the service which is known as an unused service. The money paid for an unused service to the insurance company is nothing but an asset. The enterprise's money is along with the insurance company; which is known as debtor of the enterprise.

Notes

Debit the Asset A/c Prepaid Non Life insurance Balance sheet

Credit the expense account (to downsize the amount actually paid 15 months to 12 months for one year) will be deducted from the total amount shown in the debit side of P&L Account.

Journal entry for the first transaction.

Dec 31,2005 Insurance premium paid ₹1,500.

The journal entry for the insurance premium paid is as follows:

			₹	₹
Dec 31	**Insurance premium A/c**	**Dr**	**1,500**	
	To Cash A/c	Cr		1,500
(Being the insurance premium paid)				

The journal entry for the pre-payment of insurance premium is as follows:

(or)

The journal entry for the outstanding rental amount is as follows:

			₹	₹
Dec,31	**Non-Life insurance Prepaid A/c**	**Dr**	**300**	
	To Insurance premium A/c	Cr		3,00
Being the insurance premium pre-paid to be treated as asset				

How many accounts are involved in the transactions ?

1. Cash A/c
2. Non-Life insurance
3. Insurance premium A/c

Dr **Cash A/c** **Cr**

Date	Particulars	₹	Date	Particulars	₹
	To Balance c/d	1,500	Dec 31	By Insurance Premium	1,500
		1,500			1,500
	By Balance B/d	1,500			

Dr **Non-Life Insurance Prepaid A/c** **Cr**

Date	Particulars	₹	Date	Particulars	₹
Dec 31	To Insurance premium	300		By balance c/d	300
		300			300
	To balance c/d	300			

Dr **Insurance premium A/c** **Cr**

Date	Particulars	₹	Date	Particulars	₹
Dec 31	To cash A/c	1,500	Dec 31	By Non life insurance Prepaid By balance b/d	300 1,200
		1,500			1,500
	To balance c/d	1,200			

Notes

Total amount of the Insurance premium of the year i.e. 12 months

= Total amount of the premium paid for 15 months (Amount paid in advance for 3 months)

= ₹ 1,500 - ₹ 300 = ₹ 1,200

How is the adjustment entry of prepaid insurance premium effected in the Profit & Loss A/c and Balance sheet?

Dr **Profit & Loss account for the year ended……..** **Cr**

	₹		₹
To Insurance Premium paid	1,500		
Less: Prepaid insurance	300		
To insurance premium	1,200		

Balance sheet as on dated……..

Liabilities	₹	Assets	₹
		Insurance premium prepaid	300
			300

3. ***For Accrued Incomes of the Business***

Accrued Income: There may be certain incomes which have been earned during the year but not yet received till the end of the year.

Example: A company has earned interest on income for the year 2009 but has not received it during that particular period.

Accrued Income Account Dr.

To Relating Income Account

The accrued incomes are disclosed in the assets side of the Balance Sheet and showed in the credit side of the Trading and Profit & Loss Account.

March 31,2006: Total amount of Dividend outstanding is ₹ 3,500 out of ₹ 10,000 dividend income from XYZ Ltd..

How much is the dividend income received from XYZ Ltd?

Dividend income received

= Total amount of dividend

(–)

Amount of dividend yet to be received

₹ 10,000 – ₹3,500 = ₹ 6,500

The journal entry for an adjustment is as follows:

Debit the asset for the amount of income to be received

should be brought under the balance sheet.

Credit the income not yet received which is also an income of the enterprise in order to determine the total amount of dividend during the year; brought under the credit side profit & loss account and should be added with the amount of dividend received.

Notes

The amount of dividend received in cash is ₹ 6,500.

The journal entry for the first transaction for the receipt of the dividend ₹ 6,500:

Mar 31	Cash A/c Dr	6,500	
	To Dividend A/c		6,500
(Being the amount of dividend received)			

The journal entry for the dividend outstanding ₹ 3,500:

Mar 31	Dividend O/s Dr	3,500	
	To Dividend A/c		3,500
(Being the dividend outstanding treated as an asset)			

How many number of accounts involved in the process of a transaction?

1. Cash A/c
2. Dividend O/s A/c
3. Dividend A/c

Dr **Cash A/c** **Cr**

Date	Particulars	₹	Date	Particulars	₹
Mar 31	To Dividend	6,500		By Balance c/d	6,500
					6,500
	To balance c/d	6,500			

Dr **Dividend O/s A/c** **Cr**

Date	Particulars	₹	Date	Particulars	₹
Mar 31	To Dividend	3,500	Mar 31	By Balance c/d	3,500
					3,500
	To balance c/d	3,500			

Dr **Dividend A/c** **Cr**

Date	Particulars	₹	Date	Particulars	₹
Mar 31	To Balance c/d	10,000	Mar 31	By cash By Dividend O/s	6,500 3,500
		10,000			10,000
				By balance c/d	10,000

How is the adjustment entry of outstanding of dividend income effected in the Profit & Loss A/c and Balance sheet?

Dr **Profit and Loss account for the year ended……..** **Cr**

	₹		₹
		By Dividend	6,500
		Add:O/s Dividend XYZ Ltd	3,500
		Total amount of dividend	10,000

Notes

Balance sheet as on dated……..

Liabilities	₹	Assets	₹
		Dividend Outstanding	3,500
			3,500

4. ***For Unaccrued Incomes or income received in advance of the Business***

Income received in advance: Sometimes, traders receive certain amounts during a particular trading period which are to be earned by them in future periods.

Relating Income Account Dr.

To Unaccrued Income Account

Unaccrued incomes are disclosed in the liability side of the Balance Sheet and subtracted from the relating incomes in the credit side of the Trading and Profit & Loss Account.

March 31: Interest received in advance ₹ 1,500 from Mr. Kandhan; total amount of interest received ₹ 6,500.

Total amount of interest received in a year

= Total actual interest received – Amount of the interest received in advance

= ₹ 6,500 – ₹ 1,500 = ₹ 5,000

Journal entry for the first transaction for the entire receipt of interest amount ₹ 6,500:

March 31	Cash A/c Dr	6,500	
	To Interest A/c		6,500
(Being the amount interest received)			

Journal entry for the amount of interest received in advance from Mr. Kandhan amounted ₹ 1,500:

March 31	Interest A/c Dr	1,500	
	To interest in Advance		1,500
(Being the amount of received interest in advance treated as liability)			

How many number of accounts are involved in this transaction ?

1. Cash A/c
2. Interest A/c
3. Kandhan A/c

Dr **Interest** **Cr**

Date	Particulars	₹	Date	Particulars	₹
	To Interest in Advance To Balance c/d	1,500 5,000	March 31	By Cash	6,500
		6,500			6,500
				By balance b/d	5,000

Notes

Dr **Cash A/c** **Cr**

Date	Particulars	₹	Date	Particulars	₹
March 31	To Interest	6,500		By Balance c/d	6,500
		6,500			6,500
	To balance b/d	6,500			

Dr **Interest in Advance A/c** **Cr**

Date	Particulars	₹	Date	Particulars	₹
	To Balance c/d	1,500	March 31	By Interest	1,500
		1,500			1,500
				By balance c/d	1,500

How does the interest received in advance affect the Profit & Loss A/c and Balance sheet?

Dr **Profit & Loss account for the year ended…….** **Cr**

		By Interest	6,500
		Less Interest received in advance from Kandhan	1,500
		Total amount of Interest	5,000

Balance sheet as on dated……..

Liabilities	₹	Assets	₹
Interest received in advance	1,500		
	1,500		

5. ***For the Depreciation on Assets***

Depreciation: The value of fixed assets diminishes gradually with their use for business purposes. The following general entries will be passed:

Depreciation Account Dr.

To Relating Assets Account

Depreciation is subtracted from the relating assets in the assets side of the Balance Sheet and disclosed in the debit side of Trading and Profit & Loss Account.

6. ***Interest on Capital and Drawings***

Interest on capital: The proprietor wants to calculate his profit after considering the interest which he loses by investing his money in the firm.

Interest on Drawings: As business allows interest on capital it also charges interest on drawings made by the proprietor. Interest so charged is an income for the business on one hand and expense for the proprietor on the other hand.

Notes

The following general entries will be passed in the final accounts:

(a) *For Interest on Capital*

Interest on Capital Account Dr.

To Capital Account

Interest on Capital is added to the capital of owner in the liabilities side of the Balance Sheet and disclosed in the debit side of the Trading and Profit & Loss Account.

(b) *For Interest on Drawings*

Drawings Account Dr.

To Interest on Drawings Account

Interest on Drawings is subtracted from the amount of capital along with the drawings and also shown in the credit side of Trading and Profit & Loss Account.

7. ***Interest on Loan and Investments***

(a) *For Interest on Loan Payable*

Profit & Loss Account Dr.

To Interest on Loan Account

Interest on Loan payable is added to the amount of Loan in the liability side of the Balance Sheet and also shown in the debit side of Profit & Loss Account.

(b) *For Interest on Investment Receivable*

Interest on Investment Account Dr.

To Profit & Loss Account

Interest on Investment Receivable is added to investment in the assets side of the Balance Sheet and also shown in the credit side of Profit & Loss account.

8. ***For Bad Debts***

Bad debts are irrecoverable debts from customers, during the course of the financial year.

Bad Debts Accounts Dr.

To Sundry Debtors Account

Bad Debts are deducted from the sundry debtors in the assets side of the Balance Sheet and shown in the debt side of Profit and Loss Account.

From the following example, the treatment of the transaction could be easily understood.

March 1, 2006: Sale of goods to Mohan ₹3,000; time period to repay the dues is 30 days.

This transaction affects two different accounts viz, Personal A/c and Real A/c

(i) ***Personal A/c:*** Mohan, who is the buyer of the goods on credit is nothing but the receiver. The relationship with Mohan should be maintained till the collection of dues of the credit sales; which mainly revolves on the future relationship.

(ii) ***Real A/c:*** During the sale of goods to Mohan on credit led to movement of goods i.e. movement of assets; between the firm and Mohan. It means that the goods are going out of the firm due to sales made to Mohan.

Notes

March 1,2006	Mohan A/c Dr	3,000	
	To Sales		3,000
(Being the credit sales transacted)			

Dr **Mohan A/c** **Cr**

Date	Particulars	₹	Date	Particulars	₹
March 1,2006	To Sales	3,000		By Balance c/d	3,000
		3,000			3,000
	To Balance b/d	3,000			

On March 31, Mr. Mohan declared himself that is insolvent, registered the inability of the customer respectively. From the above transaction, whatever the goods sold to Mohan cannot be recovered from the sales or deducted or adjusted. It means that the balance due of Mohan amounted ₹ 3,000 cannot be adjusted on the sales; instead, the following entry can be posted:

March 31,2006	Bad debts A/c Dr	3,000	
	To Mohan		3,000
(Being the bad debts are written off)			

The ultimate aim of the above entry is to close the account of the individual who is unable to make the payment of the overdue.

Dr **Mohan A/c** **Cr**

Date	Particulars	₹	Date	Particulars	₹
March 1,2006	To Sales	3,000	March 31	By Bad debts	3,000
		3,000			3,000

System of preparing the final accounts (Accrual system of Accounting):

9. ***For Provision for Bad and Doubtful Debts***

Provision for Bad and Doubtful Debts: At the end of the year, after writing off the bad debts there maybe some customers from whom it is doubtful to recover the entire amount. However, it cant be written off as bad because non-recovery of such amount is not certain. But at the same time the balance in sundry debtors account should be brought down to its net realizable figure so that Balance Sheet may not exhibit the debtors at more than their actual realizable value. Therefore, to show the approximately correct value of the sundry debtors in the balance sheet a provision or reserve is created for possible bad debts.

(a) When the provision is created:

Profit & Loss Account Dr.

To Provision for Bad and Doubtful Debts Account

Such a provision is subtracted from the debtors in the assets side of Balance Sheet and also shown in the debt side of Profit and Loss Account.

(b) *When Bad Debts are written off against the Provision for Bad and Doubtful Debts:*

Provision for Bad and Doubtful Debts Account Dr.

To Bad Debts Account

Notes

(c) *When excess amount of the provision is transferred:*

Provision for Bad and Doubtful Debts Account Dr.

To Profit & Loss Account

Mr. Ram Lal closes his books on 31st Dec., 05 on that date debtors were ₹ 50,000. On the basis of past year experience, this has been a practice to provide for bad and doubtful debts @ 10%.

You are required to journalize the above and prepare the ledger accounts and also show it in the Balance sheet as on 31st Dec 2005

Solution

Journal Entry

Date	Particulars	L.F.	Rs.	Rs.
31.12.05	Profit and loss a/c Dr. To provision for Bad & Doubtful debts a/c Provision for Bad & doubtful debts created @ 10% on ₹ 50,000		5,000	5,000

Ledger Accounts
Provision for Bad and doubtful debts a/c

Date	Particulars	L.F.	₹	Date	Particulars	L.F.	₹
31.12.05	To Balance c/d		5,000	31.12.05	By P & L a/c		5,000

Balance Sheet
As on 31.12.05

Liabilities	₹	Assets		₹
		Sundry Debtors	50,000	
		-provision for Bad & doubtful debts	5,000	45,000

10. ***For Discount Provision on Debtors***

It is a normal practice in trade to allow discount to customers for prompt payment and it constitutes a substantial sum. The following general entries will be passed in the final accounts:

(a) *When the provision for discount on debtors is created:*

Profit & Loss Account Dr.

To Provision for Discount on Debtors Account

Provision for discount on Debtors is subtracted from Sundry Debtors in the assets side of Balance Sheet and shown in the debit side of Profit and Loss Account.

(b) *When the amount of discount is written off against the Provision for Discount Account:*

Provision for Discount on Debtors Account Dr.

To Discount on Debtors Account

(c) *When excess amount of provision is transferred:*

Provision for Discount on Debtors Account Dr.

To Profit and Loss Account

Notes

Example: The following figures appear in the books of Shri Hanuman Prasad.

		₹
Jan 1	Provision for bad and doubtful debts	2,400
Jan 1	Provision for discount on debtors	1,120
Dec 31	Bad debts written off	940
Dec 31	Discount allowed during the year	1,860
Dec 31	Bad debts recovered	50

Create a provision for discount on debtors @ 2% and also for bad and doubtful debts @ 4% you are required to journalize the above and Prepare Provision for bad and doubtful debts a/c and provision for discount on debtors a/c and bad debts a/c & discount a/c.

Solution:

Journal Entries

Date	Particulars	L.F.	₹	₹
Dec 31	Provision for Bad & doubtful debts Dr.		940	
	To Bad debts a/c			940
	Bad debts transferred.			
Dec 31	Provision for discount on debtors a/c Dr.		1,860	
	To Discount allowed a/c			1,860
	Discount allowed transferred.			
Dec 31	Bad debts Recovered a/c Dr.		50	
	To Profit & Loss a/c			50
	Gain transferred.			
Dec 31	Provision for Bad & doubtful debts a/c Dr.		194.40	
	To Profit & loss a/c			194.40
	Excess transferred.			
Dec 31	Profit and loss a/c Dr.		377	
	To Provision on discount on debtors a/c			377
	Discount on debtors transferred.			

Ledger Accounts

(i) Provision for Bad and doubtful debts a/c

Date	Particulars	₹	Date	Particulars	₹
Dec. 31	To Bad debts a/c	1,420	Jan. 1	By Balance b/d	2,400.00
Dec 31	To P & L a/c	194.40			
	(Bal. Figure)				
Dec. 31	To Balance c/d	785.60			
		2,400.00			2,400.00

(ii) Bad debts a/c

Date	Particulars	₹	Date	Particulars	₹
Dec 31	To S. debtors a/c	940	Dec 31	By Provision for	
Dec 31	To debtors a/c	480		Bad & Doubtful debts a/c	1,420
		1,420			1,420

Notes

(iii) Provision for Discount on Debtors a/c

Date	Particulars	₹	Date	Particulars	₹
Dec 31	To Discount on Debtors	1,860	Jan 1	By Balance b/d	1,120
Dec 31	To Balance c/d	377	Dec. 31	By Profit & Loss a/c	1,117
		2,237			2,237

(iv) Discount on Debtors a/c

Date	Particulars	₹	Date	Particulars	₹
Dec 31	To S. Debtors	1,860	Dec 31	By Provision for Discount on Debtors a/c	1,860

(v) S. Debtors a/c

Date	Particulars	₹	Date	Particulars	₹
Dec 31	To Balance b/d	20,120	Dec. 31	By Bad debts	480
				By Balance c/d	19,640
		20,120			20,120

Note: Bad debts recovered are directly transferred to Profit and Loss a/c.

11. ***For Discount Provision on Creditors***

If a businessman receive some discounts from its customers then the following entries will be passed:

(a) *When provision for discount on creditors is created:*

Provision for Discount on Creditors Account Dr.

To Profit and Loss Account

Provision for discount on creditors is deducted from Creditors in the liability side of Balance Sheet and shown in the Credit side of Profit and Loss Account.

(b) *When discount on creditors is written off against the provision:*

Discount on Creditors Account Dr.

To Provision for Discount on Creditors Account

Example: A trader maintains a provision for discount on creditors a/c. The following balances have been extracted from his books.

	Date 31.12.05 ₹	**Date 31.12.06 ₹**
Discount Received	300	50
Sundry creditors	15,000	10,000
Provision for Discount on Creditors (opening)	400	To be credited @ 2% for 05 & 06

You are required to prepare Provision for Discount on creditors a/c as well as discount received A/c.

Solution

Notes

Discount Received a/c

Date	Particulars	₹	Date	Particulars	₹
31.12.05	Prov. For discount on creditors a/c	300	31.12.05	By S. creditors	300
31.12.06	Prov. For discount on creditors a/c	50	31.12.06	By S. creditors	50

Provision for Discount on Creditors a/c

Date	Particulars	₹	Date	Particulars	₹
31.12.05	To Balance b/d	400	31.12.05	By Discount Recd.	300
31.12.05	To P & L a/c (Balancing figure)	200	31.12.05	By Balance c/d 2% on 15,000	300
		600			600
1.1.06	To Balance b/d	300	31.12.06	By Discount Recd.	50
				By P & L a/c	50
				By Balance c/d 2% on 10,000	200
		300			300

Example: (Final Accounts with Adjustment) Prepare Final Accounts from the following balances of Mr. Ankit as on 31st December, 2009.

Extracts of Balances as on 31st December, 2007

Debit Balances	₹	Credit Balances	₹
Drawings	45,000	Capital Account	6,09,000
Goodwill	90,000	Bills Payable	41,400
Land and Building	1,80,000	Sundry Creditors	91,500
Plant and Machinery	1,20,000	Purchase Returns	7,950
Loose tools	9,000	Sales	3,45,000
Bills Receivable	6,000		
Stock 1.1.2009	1,20,000		
Purchase	1,53,000		
Wages	60,000		
Carriage Inwards	3,600		
Carriage Outwards	4,500		
Coal and Gas	16,800		
Salaries	12,000		
Rent, Rates and Taxes	8,400		
Discount allowed	4,500		
Cash at Bank	75,000		

Contd...

Notes

Cash in Hand	4,200		
Sundry Debtors	1,35,000		
Repairs	5,400		
Printing and Stationery	1,500		
Bad Debts	3,600		
Advertisements	10,500		
Sales Returns	6,000		
Furniture and Fittings	3,600		
General Expenses	15,750		

Additional Information

1. Closing stock on 31st December, 2009 was ₹1,80,000.
2. Depreciate Plant and Machinery at 5%, Loose Tools at 15% and Furniture and Fittings at 5%.
3. Provide 2½% for Discount on Sundry Debtors and Creditors and 5% for Bad and Doubtful Debts.
4. Outstanding Wages ₹ 4,500 and Rent and Taxes ₹ 2,550.

Solution:

In the Book of Mr. Ankit
Trading and Profit & Loss Account
for the year ending on 31st December, 2009

Particulars		₹	Particulars	₹
To Opening Stock		1,20,000		
To Purchases Less Returns			By Sales Less Returns	
(Rs.1,53,000 – 7,950)		1,45,050	(Rs. 3,45,000 – 6,000)	3,39,000
To Wages	60,000		By Closing Stock	1,80,000
(+) O/s Wages	4,500	64,500		
To Carriage Inwards		3,600		
To Coal and Gas		16,800		
To Gross Profit C/d		1,69,050		
		5,19,000		5,19,000

Contd...

Notes

To Carriage Outwards		4,500		
To Salaries		12,000	By Gross Profit b/d	1,69,050
To Rent, Rates & Taxes	8,400		By Reserve for Discount on Creditors @2½%	2,250
(+) Outstanding	2,550	10,950		
To Discount Allowed		4,500		
To Repairs		5,400		
To Printing & Stationary		1,500		
To Bad Debts	3,600			
(+) New Provision (D/D)	6,750			
	10,350			
(+) Provision for Discount	3,206	13,556		
To Advertisement		10,500		
To General Expenses		15,750		
To Depreciation on:				
Plant & Machinery	6,000			
Loose tools	1,350			
Furniture & Fittings	180	7,530		
To Net Profit (transferred to Capital A/c)		85,114		
		1,71,300		1,71,300

Balance Sheet

as on 31st December, 2009

Liabilities		₹	Assets		₹
Capital	6,09,000		Goodwill		90,000
(+) Net Profit	85,114		Land & Buildings		1,80,000
	6,94,114		Plant & Machinery	1,20,000	
(–) Drawings	45,000	6,49,114	(–) Depreciation	6,000	1,14,000
Bills Payable		41,400	Furniture & Fittings	3,600	
Creditors	90,000		(–) Depreciation	180	3,420
(–) Provision for			Loose Tools	9,000	
Discount	2,250	87,750	(–) Depreciation	1,350	7,650
Outstanding Wages		4,500	Sundry Debtors	1,35,000	
Outstanding Rent		2,550	(–) Prov. for D/D	6,750	
				1,28,250	
			(–) Prov. For Discount	3,206	1,25,044
			Bills Receivable		6,000
			Closing Stock		1,80,000
			Cash in Hand		4,200
			Cash at Bank		75,000
		7,85,314			7,85,314

Notes

Example: From the following Trial Balance of Mr. Das prepare Trading and Profit and Loss account for the year ended 31st December, 2009 and the Balance Sheet as on that date after taking in to account adjustments given below.

Trial Balance

as on 31st December 2009

	Dr.	Cr.
Particulars	₹	₹
Capital	–	86,140
Drawings	3,400	–
Purchases and Sales	32,400	88,200
Returns	2,300	2,150
Carriage inwards	1,500	–
Lighting and heating	800	–
Water and gas	3,400	–
Stock as on 1.1.2009	7,300	–
Rent (office)	900	–
Wages and salaries	2,500	–
Electricity	1,300	–
Postage	200	–
Printing charges	700	–
Legal charges	480	–
Interest earned	–	390
Furniture	19,100	–
Machinery	60,000	–
Buildings	35,000	–
Cash in hand	5,600	–
	1,76,880	1,76,880

Additional Information

1. Closing stock amounted to ₹ 5,100
2. Outstanding expenses wages ₹ 700, Rent- ₹ 300
3. Prepaid Printing charges ₹ 200.
4. Interest earned but not received ₹ 100
5. Depreciate Buildings @ 2%, Machineries 5% and Furniture 10%

Solution:

Notes

Trading and Profit and Loss Account
for the year ended 31st **December 2009**

Particulars		₹	Particulars		₹
To opening stock		7,300	By Sales	88,200	
To Purchases	32,400		(–) Returns	2,300	85,900
(–) Returns	2,150	30,250	By Closing stock		5,100
To Carriage inwards		1,500			
To Water & gas		3,400			
To Wages & salaries	2,500				
(+) Outstanding	700	3,200			
To Lighting & heating		800			
To Gross profit c/d		44,550			
		91,000			91,000
			By Gross Profit b/d		44,550
			By Interest earned	390	
To Rent	900		(+) Interest earned but not received	100	490
(+) Outstanding	300	1,200			
To Electricity		1,300			
To Postage		200			
To Printing charges	700				
(–) Prepaid	200	500			
To Legal charges		480			
To Depreciation on					
Buildings	700				
Machinery	3,000				
Furniture	1,910	5,610			
To Net Profit (Transferred to capital a/c)		35,750			
		45,040			45,040

Notes

Balance Sheet of Mr. Das
as on 31.12.2009

Liabilities		₹	Assets		₹
Capital	86,140		Cash in hand		5,600
(+) Net Profit	35,750		Furniture	19,100	
	121,890		(–) Depreciation	1,910	17,190
(–) Drawings	3,400	1,18,490			
			Machinery	60,000	
Wages outstanding		700	(–) Depreciation	3,000	57,000
Rent outstanding		300	Buildings	35,000	
			(–) Depreciation	700	34,300
			Closing stock		5,100
			Prepaid printing		200
			Interest earned		100
		1,19,490			1,19,490

Task From the following balances draw up a Trading and Profit and Loss Account and Balance Sheet.

	₹
Amit Joseph's Capital	30,000
Bank Overdraft	7,500
Machinery	20,100
Cash in hand	1,500
Fixture & Fitting	8,250
Opening stock	67,500
Bills Payable	10,500
Creditors	60,000
Debtors	94,500
Bill receivable	7,500
Purchases	75,000
Sales	1,93,500
Returns from customers	1,500
Returns to Creditors	1,650
Salaries	13,500
Manufacturing Wages	6,000
Commission	8,250
Trade Expenses	2,250
Discount (Cr.)	6,000
Rent	3,300

The closing stock amounted to ₹ 78,000

Hint: Gross Profit ₹ 1,23,150; Net Profit ₹ 1,01,850 and Balance Sheet Total ₹ 2,09,850.

Notes

4.5 Summary

- Final accounts include the Trading and Profit & Loss Account and Balance Sheet. Trading and Profit and Loss Account is prepared to calculate the net profit earned by business during a period.
- Balance Sheet of a business is prepared to disclose the financial picture of the business. The Trading Account shows the gross profit which is the difference of sales and cost of sales.
- Profit & Loss Account shows the net profit which is computed by matching the total revenues and expenses of the business.
- Balance Sheet is a statement which has two sides – Liability side and Assets side. Before preparing the final accounts of the business some adjustments are also done (if required).

4.6 Keywords

Balance Sheet: It is nothing but a positional statement of assets and liabilities of the firm on a particular date.

Gross Loss: It is the excess of cost of sales over sales.

Gross Profit: It is calculated by comparing the sales and cost of sales. It is the excess of sales over cost of sales.

Net Loss: Excess of expenditures over revenues is called net loss.

Net Profit: It is the excess of revenues over expenses. It is depicted by P. & L. A/c.

Trading account: It is the accounting statement of revenues and expenses.

4.7 Self Assessment

Fill in the blanks:

1. Trade unions are the part of …… of financial statement.
2. The creditors want to see two things (i) Regularity of income and (ii) ……
3. …… help while computing National Income statistics etc.
4. …… are meant for dealing in share/securities.
5. Discount on the issue of shares/debentures is .....
6. Preliminary expenses are shown in the balance sheet as .....
7. All the nominal accounts of the ..... are used to prepare the Trading and Profit & Loss Account.
8. Trading Account shows the ..... which is the difference of sales and cost of sale.
9. The excess of credit side over debit side is called.....
10. The Balance Sheet depicts the ..... of the business on a fixed date.

State whether the following are true or false:

11. Rent outstanding is a nominal account.
12. Insurance prepared is a personal account.

Notes

13. Interest received is an asset.
14. Interest accrued is an asset.
15. Bad Debts are personal account.

4.8 Review Questions

1. What do you mean by Trading Account? Give the proforma of Trading Account and explain why it is prepared.
2. What is the importance of Balance Sheet? Give a form of Balance Sheet in Liquidity order with imaginary examples.
3. What do you mean by adjustment? Explain the different adjustment entries.
4. Write short notes on the following:
   (a) Net Profit
   (b) Manufacturing Accounts
   (c) Capital and Revenue Expenditures
   (d) Capital and Revenue Receipts
5. Illustrate the interrelationship between the accounting statements and statement of position.
6. Highlight the effect of the following entries in the:
   (a) Closing stock
   (b) Interest received in advance
   (c) Rent outstanding
7. From the following information extracted from the books of Jain & Co, prepare Trading, Profit & Loss A/c for the year ended and Balance Sheet as on dated.

	Dr.	Cr.
Particulars	₹	₹
Purchase	90,300	
Sales		1,37,200
Return inward	2,200	
Stock 1.1.2009	40,000	
Drawing	5,000	
Building	30,000	
Machinery	20,000	
Furniture	8,000	
Debtors	25,000	
Wages	3,000	
Carriage inwards	2,000	
Rent and Rates	1,500	
Bad debts	1,000	
Cash	3,500	
Investment	10,000	

Contd...

Notes

Postages	2,500	
Insurance	2,000	
Return outwards		1,300
Capital		50,000
Creditors		24,000
Interest		500
Commission		3,250
Provision Bad debts		750
Bank O/d		40,000
Salaries	11,000	
Total	2,57,000	2,57,000

Additional Information

(a) Value of the stock on 31.12.2010 ₹65,000

(b) Goods worth ₹ 800 for his personal use of the proprietor.

(c) ₹ 400 of insurance paid is nothing but advance payment.

(d) Salary ₹ 1,000 for the month of December 1996 not paid i.e. outstanding

(e) Charge depreciation:

(i) Building 2% per annum

(ii) Machinery 10% per annum

(iii) Furniture 15% per annum

(f) Maintain provision for doubtful debts 5% on Sundry Debtors.

8. From the following information drawn from the books of M/s Sundaram & Co prepare Trading, Profit & Loss account for the year ended 31st March, 2009 and Balance Sheet as on date.

	Dr.	Cr.
Particulars	**(₹)**	**(₹)**
Sundaram's Capital		1,81,000
Sundaram's Drawings	36,000	
Plant and Machinery Balance on 1st April 2008	1,20,000	
Plant and machinery additions on 1st October, 2008	25,000	
Opening stock	95,000	
Purchases	7,82,000	
Return Inwards	12,000	
Sundry debtors	20,600	
Furniture & Fixture	15,000	
Freight duty	2,000	
Rent Rate and Taxes	24,600	
Printing stationery	3,800	
Trade expenses	5,400	
Sundry creditors		40,000

Contd...

Notes

Sales		9,80,000
Return outwards		3,000
Postage & telegram	800	
Provision for bad debts		400
Discounts		1,800
Rent of the premises sub let for the year upto 30th September 2004		7,200
Insurance charge	2,700	
Salaries & wages	31,300	
Cash in hand	6,200	
Cash at bank	30,500	
Carriage outwards	500	
Total	12,13,400	12,13,400

Additional Information

(a) Stock on 31st March, 2009 ₹ 94,600

(b) Write off ₹ 600 as Bad debts

(c) Provision for doubtful debts 5% on debtors

(d) Create a provision for discount on debtors & reserve for creditors 2%

(e) Provide a depreciation on furniture and fixture at 5% per @

(f) Plant machinery depreciation 20%

(g) Insurance unexpired ₹ 100

(h) A fire occurred on 25th March 2009 in the godown and stock of the value of ₹ 5,000 was destroyed, which was the insurance company admitted the claim fully which is yet to be paid.

9. From the following figures extracted from the books of M/s Amal &Vimal 31st March, 2008

	Dr.	Cr.
Particulars	**(₹)**	**(₹)**
Opening stock	30,000	
Purchases	1,10,000	
Sales		2,50,000
Building	55,000	
Wages	23,000	
Carriage inwards	3,000	
Bills payable		10,000
Furniture	9000	
Salaries	42,000	
Advertisement	24,000	
Coal and coke	2,000	
Cash at bank	14,000	
Pre-paid wages	1,000	

Contd...

Notes

Depreciation fund investment		25,000	
Machinery at cost (Rs.10,000 New)		60,000	
Sundry debtors		20,000	
Bad debts		3,000	
Depreciation fund			25,000
Sundry creditors			24,000
Rent rate and taxes		4,000	
Trade expense		4000	
Capital	Amal		50,000
	Vimal		40,000
Petty expenses		4,000	
Provision for doubtful debts		1,000	
Gas and water		1,200	
Cash in hand		800	
Outstanding rent			400
Bank loan			34,600
		4,35,000	4,35,000

Adjustment entries:

(a) The partners share profit and losses Amal 2/5 and Vimal 3/5.

(b) Closing stock ₹15,000

(c) Stock valued at ₹10,000 was destroyed by fire but insurance company admitted a claim of 8,500 only and the claim is not yet paid.

(d) Wages include ₹2,000 for installation of a new machinery on 1st Dec, 2005

(e) Depreciate the machinery at 10% per annum

10. SS Jain Bros for the year ended 31st December, 2010

	Dr.	Cr.
Particulars	₹	₹
Capital		6,00,000
Drawings	12,000	
Buildings	2,00,000	
Furniture and fittings	30,000	
Depreciation on Reserve		
Buildings		10,000
Furniture		3,000
Depreciation for the year	13,000	
Purchases	4,00,000	
Sundry creditors		40,000
Sales		5,00,000
Debtors	1,20,000	
Establishment charges	20,000	
Electricity charges	6,575	

Contd...

Notes

Postage and telegram	1,284	
Travelling and conveyance	3,816	
Advance for sales commission	1,000	
Insurance	2,500	
Rent received		12,000
Motor van (purchased 1.1.10)	80,000	
Motor van maintenance	23,425	
Fixed deposit (1.9.2010)	1,00,000	
Cash in hand	1,823	
Cash at bank	1,47,977	

Due to the difference in the trial balance, an examination of the goods was conducted which reveals following errors.

₹ 25 paid to the conveyance was debited to motor van maintenance account.

₹ 2,000 drawn from bank towards for establishment charges was omitted to be posted into ledger.

Cash column in the cash book on the receipt side stands excess total by ₹ 400

Adjustment Entries:

(a) Establishment of charges have been paid only up to November and provision of ₹ 2,000 has to be made for December.

(b) Electricity charges are O/s ₹ 25

(c) (½) commission on total sales is payable to salesmen, towards which ₹ 1000 as paid in advance.

(d) Fixed deposit earns interest at 9% per annum.

(e) Provide depreciation 20% per annum on motor car.

(f) Closing stock 31st December, 2010 ₹ 1,00,000

Answers: Self Assessment

1. Internal users
2. Solvency of the Business
3. Financial Statements
4. Stock Exchanges
5. Capital expenditure
6. Iintangible assets
7. Trial Balance
8. Gross profit
9. Net profit
10. Financial position
11. False
12. True
13. False
14. True
15. False

4.9 Further Readings

Notes

Books

Khan and Jain, "*Management Accounting*".

M. P. Pandikumar, "*Accounting & Finance for Managers*", Excel Books, New Delhi.

R. L. Gupta and Radhaswamy, "*Advanced Accountancy*".

S. N. Maheswari, "*Management Accounting*".

V. K. Goyal, "*Financial Accounting*", Excel Books, New Delhi.

Online links

www.cbdd.edu

www.futureaccountant.com

www.textbooksonline.tn.nic.in

Notes

Unit 5: Basic Cost Concepts

CONTENTS

Objectives
Introduction
5.1 Meaning of Cost Accounting
5.2 Preparation of Cost Sheet
5.2.1 Direct Cost Classification
5.2.2 Indirect Cost Classification
5.2.3 Stock of Raw Materials
5.2.4 Stock of Semi-finished Goods
5.2.5 Stock of Finished Goods
5.3 Elements of Cost
5.4 Classification of Cost
5.4.1 General Classification
5.4.2 Technical Classification
5.5 Cost Ascertainment
5.6 Summary
5.7 Keywords
5.8 Self Assessment
5.9 Review Questions
5.10 Further Readings

Objectives

After studying this unit, you will be able to:

- Prepare cost sheet
- Identify the elements of cost
- Make classification of cost
- Define cost ascertainment

Introduction

Cost accounting is the classification, recording and appropriate allocation of expenditure for the determination of the products or services, and for the suitable presentation of data for the purpose of control and management. The cost accounting normally includes the cost of job or contract, batch, process and so on. It normally illustrates the following compartments of the cost aspect of the organisation viz. production, administration, selling and distribution. The cost accounting not only reveals the amount of costs, which are relevant with the product or service, but also establishes the ways and means to control through budgets and standard cost in order to maintain the profitability of the firm.

Notes

5.1 Meaning of Cost Accounting

It is the process of classifying, recording and appropriate allocation of expenditure for the determination of costs of products or services through the presentation of data for the purpose to take decisions and guide the business organization.

The following table explains the differences between the cost accounting and management accounting:

Table 5.1: Difference between Cost and Management Accounting

S.No.	Point of Difference	Cost Accounting	Management Accounting
1.	Objectives	Its main purpose is to ascertain the cost and control	Its major objective is to take decisions through supplement presentation of accounting information
2.	Scope	It deals only with the cost and related aspects	It not only deals with the cost but also revenue. It is wider than the cost accounting
3.	Utilization of Data	It uses only quantitative information pertaining to the transactions	It uses both qualitative and quantitative information for decision making
4.	Utility	It ends only at the presentation of information	But it starts from where the cost accounting ends; means that the cost information are major inputs for decision making
5.	Nature	It deals with the past and present data	But it deals with future policies and course of actions

5.2 Preparation of Cost Sheet

Cost sheet is a document that provides for the assembly of an estimated detailed cost in respect of cost centers and cost units. It analyzes and classifies in a tabular form the expenses on different items for a particular period. Additional columns may also be provided to show the cost of a particular unit pertaining to each item of expenditure and the total per unit cost.

Cost sheet may be prepared on the basis of actual data (historical cost sheet) or on the basis of estimated data (estimated cost sheet), depending on the technique employed and the purpose to be achieved.

To find out the unit cost of the product, the statement of cost plays pivotal role in determining the cost of production, cost of goods sold, cost of sales and selling price of the product at every stage.

During the preliminary stage of preparing the cost statement of the product, there are two things to be borne in our mind at the moment of classification:

1. Direct cost classification
2. Indirect cost classification.

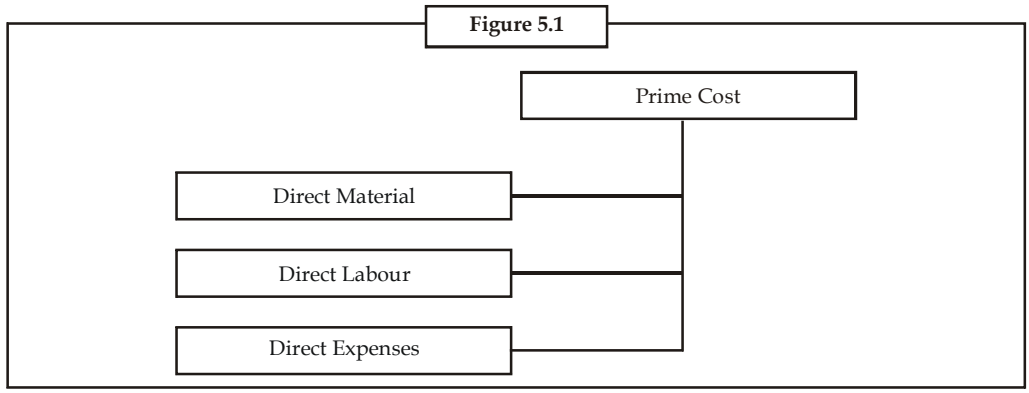
5.2.1 Direct Cost Classification

Under this classification, the direct costs of the product or service are added together to know the volume of total direct cost. The total volume of direct cost is known as "Prime Cost"

Direct Materials + Direct Labour + Direct Expenses = Prime Cost

Notes

Figure 5.1



The next stage in the unit costing to find out the factory cost. The factory cost could be computed by the combination of the indirect cost classification.

Notes Property tax on the plant is to included under the factory overheads. The tax is paid by the firm on the plant which is engaging in the production process.

5.2.2 Indirect Cost Classification

Among the classification of the overheads, the first and foremost is factory overheads. The factory overheads and work overheads are synonymously used. The factory overheads are nothing but the indirect costs incurred at the factory site. To find out the total factory cost or works cost incurred in the factory could be derived by adding the both direct cost and indirect cost incurred during the factory process.

Factory Cost = Prime Cost + Factory Overheads

Prime costs include direct labour, materials, bought-outs and sub-contracts, while factory overheads are nothing but the indirect expenses incurred during the individual process.

Example: Calculate the factory cost for the following data:

	₹
Cost of Direct Materials	2,00,000
Direct Wages	50,000
Direct Expenses	10,000
Wages of Foreman	5,000
Electric Power	2,000
Lighting of the Factory	4,000
Storekeeper's Wages	2,500
Oil and Water	1,000
Rent of the Factory	10,500
Depreciation in Plant	1,000
Consumable Store	5,000
Repairs and Renewal Plant	7,000

Notes

Solution:

Factory Cost = Prime Cost + Factory Overheads

Prime Cost = Cost of Direct Materials + Direct Wages + Direct Expenses

= ₹ 2,00,000 + ₹ 50,000 + ₹ 10,000

= ₹ 2,60,000

Factory Overheads = Wages of Foreman + Electric Power + Lighting of the Factory + Storekeeper's Wages + Oil and Water + Rent of the Factory + Depreciation in Plant + Consumable Store + Repairs and Renewal Plant

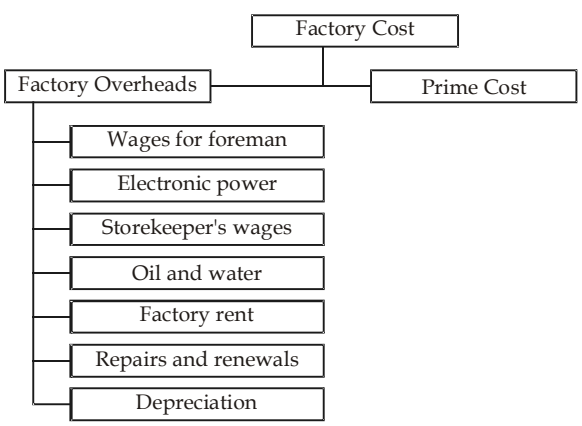
= ₹ 2,00,000 + 50,000 + 10,000 + 5,000 + 2,000 + 4,000 + 2,500 + 1,000 + 10,500 + 1,000 + 5,000 + 7,000

= ₹ 2,98,000

Hence, Factory Cost = ₹ 2,60,000 + 2,98,000

= ₹ 5,58,000

Figure 5.2



The next stage in the process of the unit costing is to find out the cost of the production. The cost of production is the combination of both the factory cost and administrative overheads.

Cost Production = Factory Cost + Administrative Overheads

Administrative overheads is the indirect expenses incurred during the office administration for the smooth flow production of finished goods.

Example: In the example discussed to measure factory cost, if the following data is added

	₹
Office Rent	6,000
Office Lighting	1,250
Office Depreciation	3,500

Contd...

Notes

Director's Fees	2,500
Manager's Salary	10,000
Office Stationery	1,000
Telephone Charges	500
Postage and Telegrams	250

Solution:

Production Cost = Factory Cost + Administrative Cost

Factory Cost = ₹ 5,58,000 (from the previous example)

Administrative Cost = Office Rent + Office Lighting + Office Depreciation + Director's Fees + Manager's Salary + Office Stationery + Telephone Charges + Postage and Telegrams

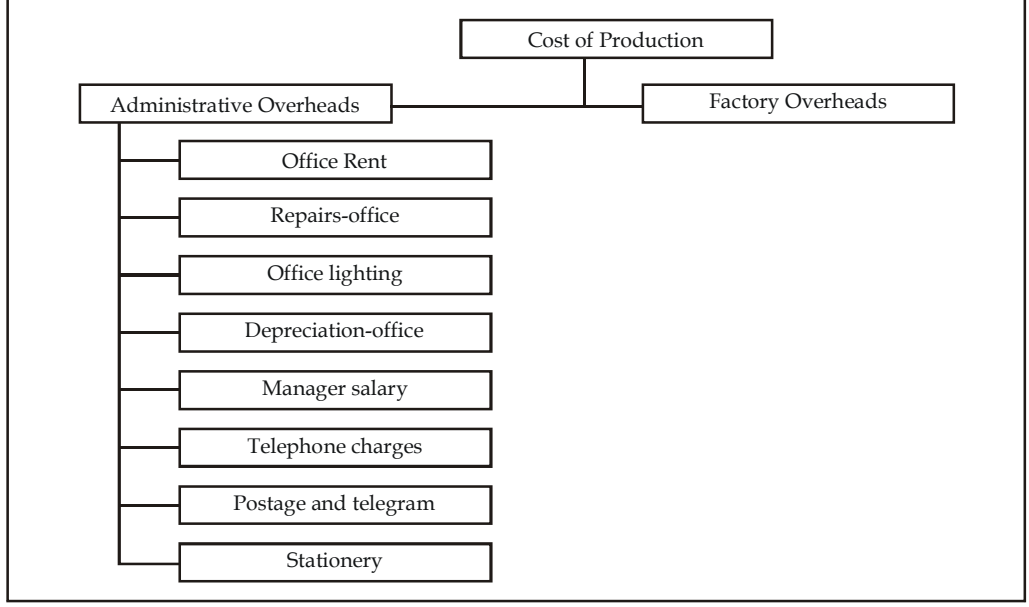
= ₹ 6,000 + 1,250 + 3,500 + 2,500 + 10,000 + 1,000 + 500 + 250

= ₹ 25,000

Hence,Production Cost = ₹ 5,58,000 + 25,000

= ₹ 5,83,000

Figure 5.3



Immediate next stage to determine in the process of unit costing is the component of cost of sales. The cost of sales is the blend of both, selling overheads and cost of production.

Whatever, the cost involved in the production process in the factory as well in the administrative proceedings are clubbed with the selling overheads to determine the cost of sales.

Cost of Sales = Cost of Production + Selling Overheads

Selling overheads are nothing but the indirect expenses incurred by the firm at the moment of selling products. In brief, whatever the expenses in relevance with the selling and distribution are known as selling overheads.

Notes

Example: In the example continued, if we add the following data,

	₹
Salesman's Salary	10,500
Travelling Expenses	1,000
Carriage Outward	750
Advertising	3,500
Warehouse Charges	₹ 1,000

Calculate the cost of sales.

Solution:

Cost of Sales = Cost of Production + Selling Overheads

Cost of Production = ₹ 5,83,000 (from the previous example)

Selling Overheads = Salesman's Salary + Travelling Expenses + Carriage Outward + Advertising + Warehouse Charges

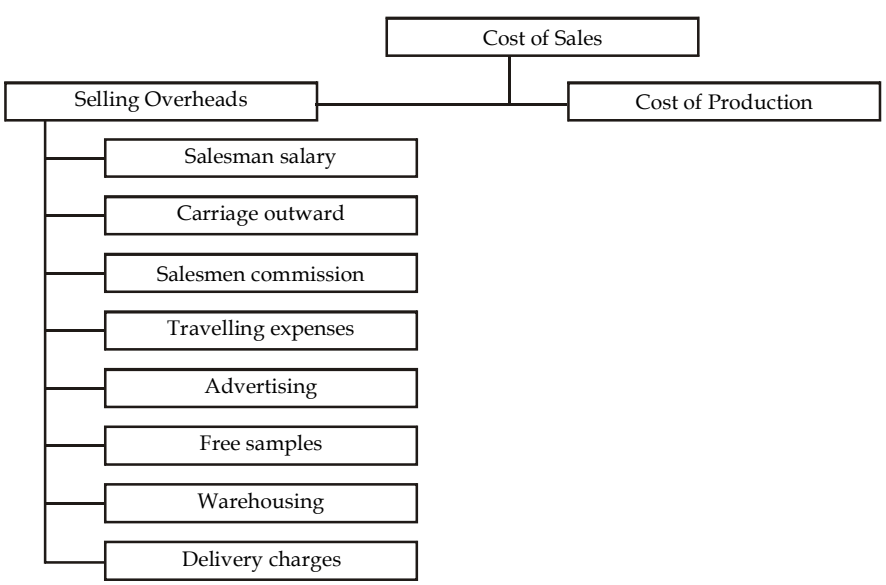
= ₹ 10,500 + 1,000 + 750 + 3,500 + 1,000

= ₹ 16,750

Hence, Cost of Sales = ₹ 5,83,000 + 16,750

= ₹ 5,99,750

Figure 5.4



The last but most important stage in the unit costing is determining the selling price of the commodities. The selling price of the commodities is fixed by way of adding both the cost of sales and profit margin out of the product sales.

Sales = Cost of Sales + Margin of Profit

Notes

Example: In the example continued, if we add the profit that can be earned to be ₹ 48,900. Calculate the product sales expected.

Solution:

Sales = Cost of Sales + Margin of Profit

= ₹ 5,99,750 (from the previous example) + 48,900

= ₹ 6,48,650

Under the unit costing, the selling price of the product can be determined through the statement form.

Example: Calculate the prime cost, factory cost, cost of production cost of sales and profit form the following particulars:

	₹		₹
Direct materials	2,00,000	Office stationery	1,000
Direct wages	50,000	Telephone charges	250
Direct expenses	10,000	Postage and telegrams	500
Wages of foreman	5,000	Salesmen's' salaries	2500
Electric power	1,000	Travelling expenses	1,000
Lighting: Factory	3,000	Repairs and renewal plant	7,000
Office	1,000	Office premises	1,000
Storekeeper's wages	2,000	Carriage outward	750
Oil and water	1,000	Transfer to reserves	1,000
Rent: Factory	10,000	Discount on shares written off	1000
Office	5,000	Advertising	2,500
Depreciation Plant	1,000	Warehouse charges	1000
Office	2,500	Sales	3,79,000
Consumable store	5,000	Income tax	20,000
Managers' salary	10,000	Dividend	4,000
Directors' fees	2,500		

Solution:

Cost Statement/Cost Sheet

Particulars	₹	₹
Direct Materials	2,00,000	
Direct wages	50,000	
Direct expenses	10,000	
Prime Cost		**2,60,000**
Factory Overheads:		
Wages of foreman	5,000	
Electric power	1,000	
Lighting : Factory	3,000	
Storekeeper's wages	2,000	
Oil and water	1000	

Contd...

Notes

Rent: Factory	10,000	
Depreciation Plant	1000	
Consumable store	5,000	
Repairs and Renewal Plant	7,000	35,000
Factory Cost		**2,95,000**
Administration Overheads:		
Rent Office	5,000	
Depreciation office	2,500	
Managers' salary	10,000	
Directors' fees	2,500	
Office stationery	1,000	
Telephone charges	250	
Postage and telegrams	500	
Office premises	1,000	
Lighting: Office	1,000	23,750
Cost of production		**3,18,750**
Selling and distribution overheads:		
Carriage outward	750	
Salesmen's salaries	2500	
Travelling expenses	1,000	
Advertising	2500	
Warehouse charges	1000	
	7,750	
Cost of Sales		**3,26,500**
Profit		**52,500**
Sales		**3,79,000**

The next stage in the preparation of the cost statement is to induct the stock of raw materials, work in progress and finished goods.

5.2.3 Stock of Raw Materials

The raw materials stock should be taken into consideration for the preparation of the cost sheet. The cost of the raw materials is nothing but the direct materials cost of the product. The cost of the materials is in other words cost of the materials consumed for the production of a product.

Particulars	₹
Opening stock of raw materials	XXXXX
(+) Purchases of raw materials	XXXXX
	XXXXX
(–) Closing stock of raw materials	XXXXX
Cost of materials consumed	**XXXXX**

Notes

5.2.4 Stock of Semi-finished Goods

The treatment of the stock of semi-finished goods is mainly depending upon the two different approaches, viz:

1. Prime cost basis, and
2. Factory cost basis.

The factory cost basis is considered to be predominant over the early one due to the consideration of factory overheads at the moment of semi finished goods treatment. The indirect expenses are the expenses converting the raw materials into semi-finished goods which should be relatively considered for the treatment of the stock valuation rather than on the basis of prime cost.

Particulars	₹
Prime cost	XXXXXX
(+) Factory overheads incurred	XXXXXX
(+) Opening work in progress	XXXXXX
(–) Closing work in progress	XXXXXX
Factory cost	**XXXXXX**

5.2.5 Stock of Finished Goods

The treatment of the stock of finished goods should carried over in between the opening stock and closing stock and adjusted among them before the finding the cost of goods sold.

Particulars	₹
Cost of production	XXXXX
(+) Opening stock of finished goods	XXXXX
(–) Closing stock of finished goods	XXXXX
Cost of goods sold	**XXXXX**

Example: The following data has been from the records of Centre corporation for the period from June 1 to June 30, 2010.

	2005 1st Jan	**2005 31st Jan**
Cost of raw materials	60,000	50,000
Cost of work in progress	24,000	30,000
Cost of finished good	1,20,000	1,10,000

Transaction during the month

Purchase of raw materials	9,00,000
Wages paid	4,60,000
Factory overheads	1,84,000
Administration overheads	60,000
Selling overheads	40,000
Sales	18,00,000

Draft the cost sheet.

Solution:

Notes

Cost Sheet

Particulars	₹	₹
Opening stock of raw materials 1st Jan	60,000	
(+) Purchase of raw materials	9,00,000	
(-) Closing stock of raw materials 31st Jan	50,000	
Raw materials consumed during the year		9,10,000
(+) Wages paid		4,60,000
Prime cost		**13,70,000**
Factory overheads	1,84,000	
(+) Opening stock of semi goods	24,000	
(-) Closing stock of semi goods	30,000	
Factory overheads		1,78,000
Factory or Works cost		**15,48,000**
(+) Administration overheads		60,000
Cost of Production		**16,08,000**
(+) Opening stock of finished goods	1,20,000	
(–) Closing stock of finished goods	1,10,000	
Cost of goods sold		**16,18,000**
(+) Selling overheads		40,000
Cost of Sales		**16,58,000**
Net profit		1,42,000
Sales		**18,00,000**

Task From the following information extracted from the records of the M/s Sundaram & Co.

Particulars	On 1-4-2009 (in ₹)	On 31-3-2010 (in ₹)
Stock of raw materials	80,000	1,00,000
Stock of finished goods	2,00,000	3,00,000
Stock of work in progress	20,000	28,000

Particulars	₹	Particulars	₹
Indirect labour	1,00,000	Administrative expenses	2,00,000
Oil	20,000	Electricity	60,000
Insurance on fixtures	6,000	Direct labour	6,00,000
Purchase of raw materials	8,00,000	Depreciation on machinery	1,00,000
Sale commission	1,20,000	Factory rent	1,20,000
Salaries of salesmen	2,00,000	Property tax on building	22,000
Carriage outward	40,000	Sales	24,00,000

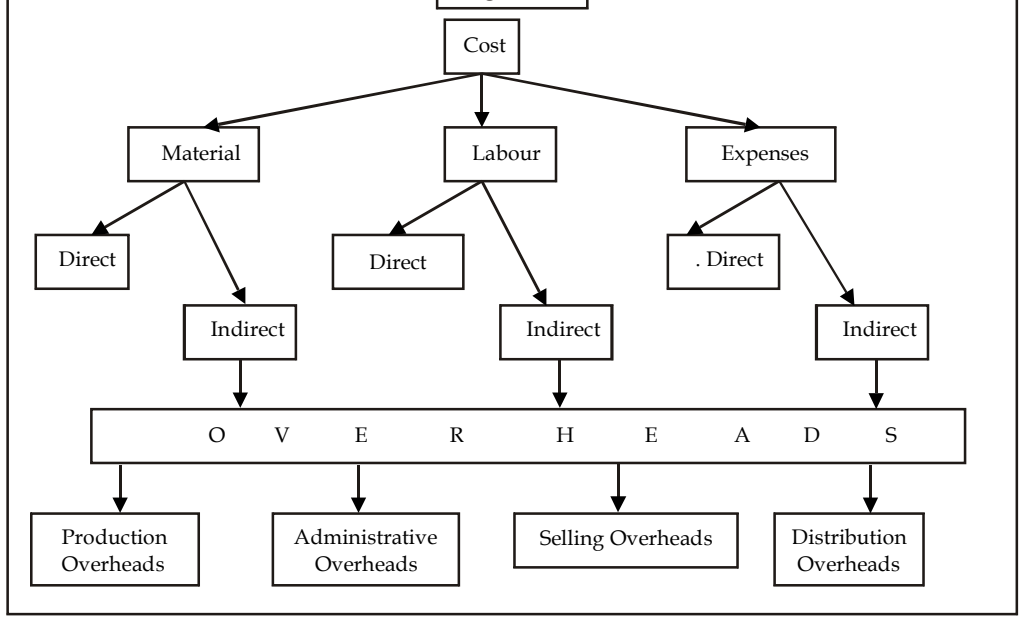
Prepare cost statement of the M/s Sundaram & Co.

Notes

5.3 Elements of Cost

To find the total cost of the product or service, the costs incurred are grouped under various categories.

Figure 5.5



The elements of cost are as follows:

1. ***Material***

   Material includes the following:

   (a) *Direct material:* To obtain the materials that will be converted into the finished product, the manufacturer purchases raw materials. Raw materials are the basic materials and parts used in the manufacturing process. For example, car manufacturers such as Maruti Udyog and Tata Motors use steel, plastics, and glass as raw materials in making cars. Raw materials that can be physically and directly associated with the finished product during the manufacturing process are called direct materials. Examples include flour in the making of bread, steel in the making of cars etc. Direct materials for HP in making computers include plastic, hard drives, processing chips etc.

   Direct material is

   Opening stock + Purchases – Closing stock

   (b) *Indirect material:* Some raw materials cannot be easily associated with the finished product. These are considered indirect materials. Indirect materials

   (i) do not physically become part of the finished product, such as lubricants and polishing compounds, or

   (ii) cannot be traced because their physical association with the finished product is too small in terms of cost, such as nails and Fevicol (as per the previous example). Indirect materials are treated as part of manufacturing overhead.

Notes

2. ***Labour***

Labour can be categorised as:

(a) *Direct labour:* The work of factory employees that can be physically and directly associated with converting raw materials into finished goods is considered direct labour.

(b) *Indirect labour:* In contrast, the wages of maintenance people, time-keepers, and supervisors are usually identified as indirect labour. Their efforts have no physical association with the finished product, or it is impractical to trace the costs to the goods produced. Like indirect materials, indirect labour is also treated as manufacturing overhead.

3. ***Expenses***

Expenses include the following:

(a) *Direct Expenses:* Apart from material and labour, many a times there is need to insert some specific expenses such as production royalties to be paid to the holders of manufacturing/patent rights, hire/purchase of certain special machine tools for one-time jobs, etc. This category of cost is termed as direct expenses.

(b) *Indirect expenses:* Indirect expenses consist of costs that are indirectly associated with the manufacture of the finished product. These costs may also be manufacturing costs that cannot be classified as direct materials or direct labour. Indirect expenses include indirect materials, indirect labour, depreciation on factory assets, etc.

4. ***Overhead***

The term overhead includes indirect material, indirect labor and indirect expenses. Thus, all indirect costs are overheads.

A manufacturing organization can broadly be divided into the following three divisions:

(a) Factory or works, where production is done.

(b) Office and administration, where routine as well as policy matters are decided.

(c) Selling and distribution, where products are sold and finally dispatched to customers.

Overheads may be incurred in a factory or office or selling and distribution divisions. Thus, overheads may be of three types:

(a) ***Factory Overheads***

They include the following things:

(i) Indirect material used in a factory such as lubricants, oil, consumable stores, etc.

(ii) Indirect labor such as gatekeeper, timekeeper, works manager's salary, etc.

(iii) Indirect expenses such as factory rent, factory insurance, factory lighting, etc.

(b) ***Office and Administration Overheads***

They include the following things:

(i) Indirect materials used in an office such as printing and stationery material, brooms and dusters, etc.

(ii) Indirect labor such as salaries payable to office manager, office accountant, clerks, etc.

(iii) Indirect expenses such as rent, insurance, lighting of the office.

Notes

(c) ***Selling and Distribution Overheads***

They include the following things:

(i) Indirect materials used such as packing material, printing and stationery material, etc.

(ii) Indirect labor such as salaries of salesmen and sales manager, etc.

(iii) Indirect expenses such as rent, insurance, advertising expenses, etc.

5.4 Classification of Cost

Costs can be classified according to:

1. General classification
2. Technical classification

5.4.1 General Classification

Generally, the costs are classified as follows:

Product vs Period Costs

Product costs include all the costs that are involved in acquiring or making product. For a manufacturer, they would be the direct materials, direct labor, and manufacturing overhead used in making its products. Product costs are viewed as "attaching" to units of product as the goods are purchased or manufactured and they remain attached as the goods go into inventory awaiting sale. So initially, product costs are assigned to an inventory account on the balance sheet. When the goods are sold, the costs are released from inventory as expense (typically called Cost of Goods Sold) and matched against sales revenue.

The product costs of direct materials, direct labor, and manufacturing overhead are also "inventoriable" costs, since these are the necessary costs of manufacturing the products. The purpose is to emphasize that product costs are not necessarily treated as expense in the period in which they are incurred. Rather, as explained above, they are treated as expenses in the period in which the related products are sold. This means that a product cost such as direct materials or direct labor might be incurred during one period but not treated as an expense until a following period when the completed product is sold.

Notes Manufacturing overhead is also referred to as factory overhead, indirect manufacturing costs, and burden.

Period costs are not included as part of the cost of either purchased or manufactured goods and are usually associated with the selling function of the business or its general administration. As a result, period costs cannot be assigned to the products or to the cost of inventory. These costs are expensed on the income statement in the period in which they are incurred, using the usual rules of accrual accounting that we learn in financial accounting.

Examples:

1. Sales commissions and office rent.
2. Selling and administrative expenses.

Notes

The period costs are reported as expenses in the accounting period in which they

1. best match with revenues,
2. when they expire, or
3. in the current accounting period.

In addition to the selling and general administrative expenses, most interest expense is a period expense.

Direct vs Indirect Costs

Direct costs are those costs that can be traced to specific segments of operations.

Direct cost of the product can be classified into three major categories.

1. ***Direct Material:*** Direct material which is especially used as a major ingredient for the production of a product.

Example:

(a) The wood is a basic raw material for the wooden furniture. The cost of the wood procured for the furniture is known direct material cost.

(b) The cotton is a basic raw material for the production of yarn. The cost of procuring the cotton is known as direct material for the manufacturing of yarn.

2. ***Direct Labour:*** Direct labour is the cost of the labour which is directly involved in the production of either a product or service.

Example: The cost of an employee who is mainly working for the production of a product/service at the centre, known as direct labour cost.

3. ***Direct Expenses:*** Direct expenses which are incurred by the firm with the production of either a product or service. The excise duty and octroi duty are known as direct expenses in connection with the production of articles and so on.

Indirect costs are those costs that can not be identified with particular segments.

1. ***Indirect Material:*** The material which is spent cannot be measured for a product is known as indirect material.

Example: The thread which is used for tailoring the shirt cannot be measured or quantified in specific length as well as ascertained the cost.

2. ***Indirect Labour:*** Indirect labour is the cost of the labour incurred by the firm other than the direct labour cannot be apportioned.

Example: Cost of supervisor, cost of the inspectors and so on.

3. ***Indirect Expenses:*** Indirect expenses are the expenses other than that of the direct expenses in the production of a product. The expenses which are not directly part of the production process of a product or service known as indirect expenses.

Example: Rent of the factory, salesmen salary and so on.

Common costs are shared by multiple segments.

Notes

Example: Manufacturer of chairs, Segments = Plastic chairs (P) & Wood chairs (W)

Manufacturing vs Non-manufacturing Costs

Manufacturing costs are product costs consisting of Direct Material (DM), Direct Labor (DL) and Manufacturing Overhead (MOH, OH)

Manufacturing Costs = DM + DL + MOH

Non-manufacturing costs are period costs incurred in selling and administrative activities.

Notes MOH = All indirect manufacturing costs, including

1. Indirect materials
2. Indirect labor — supervision, maintenance, janitorial, etc.
3. Other services — utilities, supplies, rent, insurance, depreciation, taxes, etc. used in production
4. Anything that is related to production (cafeteria, fitness room, etc)

5.4.2 Technical Classification

Apart from this classification the costs are also classified into various categories according to the purpose and requirements of the firm. Some of the most important classifications are as follows:

Let us understand each of them one by one.

By Nature or Element or Analytical Segmentation

The costs are classified into three major categories Materials, Labour, and Expenses.

By Functions

Under this methodology, the costs are classified into various divisions or functions of the enterprise *viz.* Production cost, Administration cost, Selling & Distribution cost and so on.

The detailed classification is that total of production cost sub-classified into cost of manufacture, fabrication or construction.

Example:

1. ***Costs of manufacture:*** The cost of materials for packaging, the cost of electricity and water, the cost of promotion and advertising, etc.
2. ***Costs of construction:*** The cost of materials, the cost of equipment, the cost of labour, etc.
   (a) Cost of transportation
   (b) Cost of management and co-ordination
   (c) Depreciation of fixed assets.

And another classification of cost is commercial cost of operations; which is other than the cost of manufacturing and production.

Notes

The major components of commercial costs are known as administrative cost of operations and selling and distribution cost of operations.

Example:

1. ***Administrative cost of operations:*** Expense incurred in controlling and directing an organization.
2. ***Selling and distribution cost of operations:*** Any cost incurred by a producer or wholesaler or retailer or distributor (as for shipping, etc.)

Direct and Indirect Cost

1. ***Direct cost:*** This classification of costs are incurred for the manufacture of a product or service. They can be conveniently and easily identified.

   (a) *Material cost for the product manufacture:* It includes the direct material for manufacturing.

   Example: For garments factory-cloth is the direct material for ready made garments.

   (b) *Labour cost for production:* Labour cost is the cost of the entire labour who is directly involved in the production of a product as well as attributable to single product expenses and so on.

2. ***Indirect cost:*** The costs which are incurred for and cannot be easily identified for any single cost centre or cost unit known as indirect cost.

   Indirect material cost, Indirect labour cost and Indirect expenses are the three different components of the indirect expenses.

   (a) *Indirect material:*

   Example: Cost of the thread cannot be conveniently measured for single unit of the product.

   (b) *Indirect labour:*

   Example: Salary paid to the supervisor.

By Variability

The costs are grouped according to the changes taken place in the level of production or activity.

It may be classified into three categories:

1. ***Fixed cost:*** It is cost which do not vary irrespective level of an activity or production.

   Example: Rent of the factory, salary to the manager and so on.

2. ***Variable cost:*** It is a cost which varies in along with the level of an activity or production like material consumption and so on.

Notes

Example: The fuel for an airline. The cost for it changes with the number of flights and how long the trips are.

3. ***Semi variable cost:*** It is a cost which is fixed up to certain level of an activity. Later it fluctuates or varies in line with the level of production. It is known in other words as step cost.

Example: Electricity charges

Labour costs in a factory are semi-variable. The fixed portion is the wage paid to workers for their regular hours. The variable portion is the overtime pay they receive when they exceed their regular hours.

By Controllability

The costs are classified into two categories in accordance with controllability, as follows:

1. ***Controllable costs:*** Cost which can be controlled through some measures known as controllable costs. All variable cost are considered to be controllable in segment to some extent.
2. ***Uncontrollable costs:*** Costs which cannot be controlled are known as uncontrollable costs. All fixed costs are very difficult to control or bring down; they rigid or fixed irrespective to the level of production.

By Normality

Under this methodology, the costs which are normally incurred at a given level of output in the conditions in which that level of activity normally attained.

1. ***Normal cost:*** It is the cost which is normally incurred at a given level of output in the conditions in which that level of output is normally achieved.
2. ***Abnormal cost:*** It is the cost which is not normally incurred at a given level of output in the conditions in which that level of output is normally attained.

Normal cost for a defined-benefit pension plan generally represents the portion of the economic cost of the participant's anticipated pension benefits allocated to the current plan year.

Abnormal cost maybe unexpected costs incurred, as a result of natural calamities or fire or accident or such other losses.

By Time

According to this classification, the costs are classified into historical costs and predetermined costs:

1. ***Historical costs:*** The costs are accumulated or ascertained only after the incurrence known as past cost or historical costs.
2. ***Predetermined costs:*** These costs are determined or estimated in advance to any activity by considering the past events which are normally affecting the costs.

Notes

For Planning and Control

The following are the two major classifications, *viz.* standard cost and budgetary control:

1. ***Standard cost:*** Standard cost is a cost scientifically determined by way of assuming a particular level of efficiency in utilization of material, labour and indirect expenses.

   The prepared standards are compared with the actual performance of the firm in studying the variances in between them. The variances are studied and analysed through an exclusive analysis.

2. ***Budget:*** A budget is detailed plan of operation for some specific future period. It is an estimate prepared in advance of the period to which it applies. It acts as a business barometer as it is complete programme of activities of the business for the period covered.

The control is exercised through continuous comparison of actual results with the budgets. The ultimate aim of comparing with each other is to either to secure individuals' action towards the objective or to provide a basis for revision.

For Managerial Decisions

The major classifications are and marginal cost and sunk cost.

Marginal cost is the amount at any given volume of output by which aggregate costs are changed if the volume of output is decreased or increased by one unit.

Sunk costs are costs that cannot be recovered once they have been incurred.

Example: ***Marginal Cost:*** Suppose it costs ₹ 1000 to produce 100 units and ₹ 1020 to produce 101 units. The average cost per unit is ₹ 10, but the marginal cost of the 101 unit is ₹ 20.

Sunk Cost: Spending on advertising or researching a product idea.

They can be a barrier to entry. If potential entrants would have to incur similar costs, which would not be recoverable if the entry failed, they may be scared off.

5.5 Cost Ascertainment

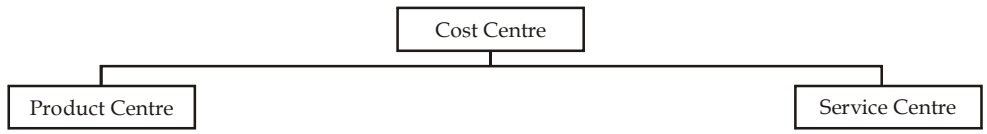
Cost denominates the use of resources only in terms of monetary terms. In brief, cost is nothing but total of all expenses incurred for manufacturing a product or attributable to given thing. In other words, the cost is nothing but ascertained expression of expenses in terms of monetary, incurred during its production and sale.

To ascertain a cost, the firm should maintain at least a small division of activity or responsibility in which costs are accounted, at where the costs are ascertained and controlled. In brief, cost centre is normally a location where a specified activity takes place.

Accumulation of all cost incurred for an activity leads to ascertainment of cost for the specified activity, but the control is being done by the head or in-charge of that activity is responsible for control of costs of his centre.

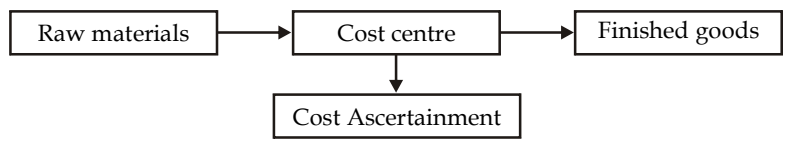
Notes

Figure 5.6



Product centre is a centre at where the cost is ascertained for the product which passes through the process.

Figure 5.7



Service centre is the centre or division which normally incurs direct or indirect costs but does not work directly on products.

Example: Maintenance department

General factory office

Profit centre is a centre not only responsible for both revenue as well as expenses but also for the profit of an activity.

Case Study

PATREJ Co Ltd. is a well-known small scale unit, manufacturing wooden furniture, steel almirah since its inception in 1975. It is known as a well-established export-oriented company in manufacturing furnitures more specifically for developing countries. The company has received an order from the Govt. of India through United Nations Organization to meet the needs of rehabilitation of Indonesia. The firm is required to supply the steel almirahs to meet the needs of Tsunami affected areas of Indonesia. The production capacity of the firm per year is 10,000 steel almirahs.

	₹		₹
Local Steel Material	5,00,000	Excise duty	1,00,000
Imports of sheet materials	50,000	Administrative office expenses	1,00,000
Direct labour in works	5,00,000	Salary of the managing director	30,000
Indirect labour in works	1,00,000	Salary of the joint managing director	20,000
Storage of raw materials and spares	25,000	Fees of Consultant	10,000
Fuel	75,000	Expenses of Promotion	80,000
Tools consumed	10,000	Selling expenses	90,000

Contd...

Notes

Depreciation on plant	50,000	Sales depots	60,000
Salaries of works personnel	50,000	Packaging and distribution	60,000

But the local business environment conditions are as follows:

Cost of the materials expected to increase by 5%

Cost of the direct labour soared up to 20% due to greater demand for skilled labour in the market.

Fuel cost expected to raise by 2.5% due to Gulf War crisis.

The government has announced 20% decrease in the volume of excise duty on the import of sheet materials.

The profit margin of 10% on sales is to be charged on the job work.

In addition to the early information, the government has announced the amount of subsidy for single unit ₹40.

Question

You are required to find out the price of the steel almirah for the domestic market and exports to the country Indonesia.

5.6 Summary

- Cost denominates the use of resources only in terms of monetary terms.
- In brief, cost is nothing but total of all expenses incurred for manufacturing a product or attributable to given thing.
- Service centre is the centre or division which normally incurs direct or indirect costs but does not work directly on products.
- Normally, maintenance dept. and general factory office are very good examples of the service centre.
- Costs which cannot be controlled are known as uncontrollable costs.
- All fixed costs are very difficult to control or bring down; they rigid or fixed irrespective to the level of production.
- A budget is detailed plan of operation for some specific future period. It is an estimate prepared in advance of the period to which it applies.
- It acts as a business barometer as it is complete programme of activities of the business for the period covered.
- Under costing, the role of unit costing is inevitable tool for the industries not only to identify the volume of costs incurred at every level but also to determine the rational price on the commodities in order to withstand among the competitors.
- Direct labour is the cost of the labour which is directly involved in the production of either a product or service.
- Indirect expenses are the expenses other than that of the direct expenses in the production of a product.
- The expenses which are not directly part of the production process of a product or service known as indirect expenses.

Notes

5.7 Keywords

Cost Centre: The location at where the cost of the activity is ascertained.

Cost of Production: It is the combination of cost of manufacturing an article or a product and administrative cost.

Cost of Sales: It is the entire cost of a product.

Cost Sheet: It is a statement prepared for the computation of cost of a product/service.

Cost: Expense incurred at the either cost centre or service centre.

Direct Cost: Cost incurred which can be easily ascertained and measured for a product.

Factory Cost: It is the total cost incurred both direct and indirect at the work spot during the production of an article.

Indirect Cost: Cost incurred cannot be easily ascertained and measured for a product.

Prime Cost: Combination of all direct costs *viz.* Direct materials, Direct labour and Direct expenses.

Product Centre: It is the location at where the cost is ascertained through which the product is passed through.

Profit centre: It is responsibility centre not only for the cost and revenues but also for profits for the activity.

Selling Price or Sales: The summation of cost of sales and profit margin.

Service Centre: The location at where the cost is incurred either directly or indirectly but not directly on the products.

5.8 Self Assessment

Choose the appropriate answer:

1. Fixed cost is the cost under the classification of
   - (a) Variability (b) Normality
   - (c) Controllability (d) Functions
2. Standard costing is brought under the classification of
   - (a) Controllability (b) Functions
   - (c) Planning and control (d) Both (a) & (c)
3. Marginal costing is classified on the basis of
   - (a) Variability (b) Managerial decisions
   - (c) Time (d) Both (a) & (b)
4. Electricity charges incurred by the firm is
   - (a) Fixed cost (b) Semi-variable cost
   - (c) Variable cost (d) None of the above
5. Cost is
   - (a) An expense incurred (b) An expenditure incurred
   - (c) An income received (d) None of the above

Notes

6. Cost is
   (a) Direct cost only (b) Indirect cost only
   (c) Both (a) & (b) (d) None of the above
7. Direct cost is
   (a) Direct Materials (b) Direct labour
   (c) Direct Expenses (d) Prime cost
8. Factory cost is the total of
   (a) Direct and indirect costs
   (b) Product and administrative costs
   (c) Cost of sales
   (d) Profit margin
9. Selling price is the summation of
   (a) Direct and indirect costs
   (b) Product and administrative costs
   (c) Cost of sales and profit margin
   (d) Direct materials, direct labour and direct expenses
10. Prime cost is the summation of
    (a) Direct and indirect costs
    (b) Product and administrative costs
    (c) Cost of sales and profit margin
    (d) Direct materials, direct labour and direct expenses
11. Production cost is the summation of
    (a) Direct and indirect costs
    (b) Product and administrative costs
    (c) Cost of sales and profit margin
    (d) Direct materials, direct labour and direct expenses
12. Service center is the center which normally incurs
    (a) Direct and indirect costs
    (b) Product and administrative costs
    (c) Cost of sales and profit margin
    (d) Direct materials, direct labour and direct expenses
13. Which of the following is ascertained at the product center?
    (a) Price (b) Cost
    (c) Variability (d) Semi-variable cost

Notes

14. Profit center is a responsibility center for profits and
    (a) Variability and controllability
    (b) Planning and control
    (c) Cost and revenue
    (d) All of these
15. The statement prepared for the computation of a product/service cost is known as
    (a) Standard Costing (b) Marginal Costing
    (c) Prime Costing (d) None of these

5.9 Review Questions

1. Once standard costs are established, what conditions would require the standards to be revised? Give your opinion.
2. What is cost classification? Classify it, in detail.
3. As an occur what do you mean by unit costing?
4. Discuss analytically, direct and indirect costing.
5. Illustrate the concept of cost sheet through example.
6. Illustrate indirect and direct expenses by help of example.
7. Prepare the cost sheet to show the total cost of production and cost per unit of goods manufactured by a company for the month of Jan. 2010. Also find the cost of sale and profit.

Particulars	₹	Particulars	₹
Stock of raw materials 1.1.2010	6,000	Factory rent and rates	6,000
Raw materials procured	56,000	Office rent	1,000
Stock of raw material 31.1.2010	9,000	General expenses	4,000
Direct wages	14,000	Discount on sales	600
Plant depreciation	3,000	Advertisement expenses	1,200
Loss on the sale of plant	600	Income tax paid	2000
Sales	1,50,000		

8. XYION Co. Ltd. is an export oriented company manufacturing internal-communication equipment of a standard size. The company is to send quotations to foreign buyers of your product. As the cost accounts chief you are required to help the management in the matter of submission of the quotation of a cost estimate based on the following figures relating to the year 2010.

   Total output (in units) 20,000.

Particulars	₹	Particulars	₹
Local raw materials	20,00,000	Excise duty	4,00,000
Imports of raw materials	2,00,000	Administrative office expenses	4,00,000
Direct labour in works	20,00,000	Salary of the managing director	1,20,000

Contd...

Notes

Indirect labour in works	4,00,000	Salary of the joint managing director	80,000
Storage of raw materials and spares	1,00,000	Fees of directors	40,000
Fuel	3,00,000	Expenses on advertising	3,20,000
Tools consumed	40,000	Selling expenses	3,60,000
Depreciation on plant	2,00,000	Sales depots	2,40,000
Salaries of works personnel	2,00,000	Packaging and distribution	2,40,000

Prepare the cost statement in columnar form.

9. How will you visualize the costs of poor product quality, rework, repair, etc.?
10. How would you determine find the cost sheet format of a company and how does it finalise the product cost?
11. In a cost sheet, should the administration overheads come before or after the adjustments for the opening and closing stock of finished goods? Support your answer with reason.

Answers: Self Assessment

1.	(a)	2.	(c)
3.	(a)	4.	(b)
5.	(a)	6.	(c)
7.	(d)	8.	(a)
9.	(c)	10.	(d)
11.	(b)	12.	(a)
13.	(b)	14.	(c)
15.	(d)		

5.10 Further Readings

Books

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Online link

www.futureaccountant.com

Notes

Unit 6: Financial Statements: Analysis and Interpretation

CONTENTS

Objectives
Introduction
6.1 Types of Financial Statements Analysis
6.2 Ratio Analysis
6.3 Classification of Ratios
6.3.1 Short-term Solvency Ratios
6.3.2 Capital Structure Ratios
6.3.3 Profitability Ratios
6.3.4 Turnover Ratios
6.4 Summary
6.5 Keywords
6.6 Self Assessment
6.7 Review Questions
6.8 Further Readings

Objectives

After studying this unit, you will be able to:

- Discuss analysis and interpretation of financial statements
- Explain types of financial statement analysis
- Illustrate ratio analysis
- Make the classification of ratios.

Introduction

Financial statement analysis is the process of examining relationships among financial statement elements and making comparisons with relevant information. It is a valuable tool used by investors and creditors, financial analysts, and others in their decision-making processes related to stocks, bonds, and other financial instruments. The goal in analyzing financial statements is to assess past performance and current financial position and to make predictions about the future performance of a company. Investors who buy stock are primarily interested in a company's profitability and their prospects for earning a return on their investment by receiving dividends and/or increasing the market value of their stock holdings. Creditors and investors who buy debt securities, such as bonds, are more interested in liquidity and solvency: the company's short-and long-run ability to pay its debts. Financial analysts, who frequently specialize in following certain industries, routinely assess the profitability, liquidity, and solvency of companies in order to make recommendations about the purchase or sale of securities, such as stocks and bonds.

6.1 Types of Financial Statements Analysis

Analysts can obtain useful information by comparing a company's most recent financial statements with its results in previous years and with the results of other companies in the same

Notes

industry. Three primary types of financial statement analysis are commonly known as horizontal analysis, vertical analysis, and ratio analysis.

Horizontal Analysis

When an analyst compares financial information for two or more years for a single company, the process is referred to as horizontal analysis, since the analyst is reading across the page to compare any single line item, such as sales revenues.

Vertical Analysis

When using vertical analysis, the analyst calculates each item on a single financial statement as a percentage of a total. The term vertical analysis applies because each year's figures are listed vertically on a financial statement. The total used by the analyst on the income statement is net sales revenue, while on the balance sheet it is total assets.

Ratio Analysis

Ratio analysis enables the analyst to compare items on a single financial statement or to examine the relationships between items on two financial statements. After calculating ratios for each year's financial data, the analyst can then examine trends for the company across years. Since ratios adjust for size, using this analytical tool facilitates inter-company as well as intra-company comparisons.

Did u know? What are the different types of financial statements?

There are four different types of financial statements. The different types of financial statements indicate the different activities occurring in a particular business house.

1. Income Statement
2. Retained Earnings Statement
3. Balance Sheet
4. Statement of Cash Flows
5. Fund Flow Statement

6.2 Ratio Analysis

The ratio analysis is one of the important tools of financial statement analysis to study the financial stature of the business fleeces, corporate houses and so on.

How the ratios are able to facilitate to study the financial status of the enterprise?

Did u know? **What is meant by ratio?**

The ratio illustrates the relationship in between the two related variables.

What is meant by the accounting ratio?

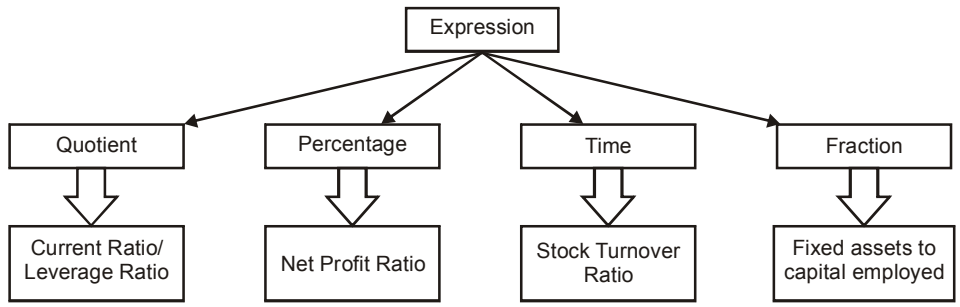
The accounting ratios are computed on the basis available accounting information extracted from the financial statements which are not in a position to reveal the status of the enterprise.

Notes

The accounting ratios are applied to study the relationship in between the quantitative information available and to take decision on the financial performance of the firm.

According to J. Betty, "The term accounting is used to describe relationships significantly which exist in between figures shown in a balance sheet, Profit & Loss A/c, Trading A/c, Budgetary control system or in any part of the accounting organization."

Figure 6.1



According to Myers "Study of relationship among the various financial factors of the enterprise".

To understand the methodology of expressing the ratios, various expressions of ratios are highlighted in the Figure 6.1.

Notes Purposes of the Ratio Analysis:

1. To study the short-term solvency of the firm — liquidity of the firm.
2. To study the long-term solvency of the firm — leverage position of the firm.
3. To interpret the profitability of the firm — Profit earning capacity of the firm.
4. To identify the operating efficiency of the firm — turnover of the ratios.

6.3 Classification of Ratios

The accounting ratios are classified into various categories, *viz.*

1. On the basis of financial statements
2. On the basis of functions

On the basis of Financial Statements

1. ***Income statement ratios:*** These ratios are computed from the statements of Trading, Profit & Loss account of the enterprise. Some of the major ratios are as following GP ratio, NP ratio, Expenses Ratio and so on.
2. ***Balance sheet or positional statement ratios:*** These types of ratios are calculated from the balance sheet of the enterprise which normally reveals the financial status of the position i.e. short-term, long-term financial position, share of the owners on the total assets of the enterprise and so on.
3. ***Inter statement or composite mixture of ratios:*** Theses ratios are calculated by extracting the accounting information from the both financial statements, in order to identify stock turnover ration, debtor turnover ratio, return on capital employed and so on.

Notes

On the basis of Functions

1. ***On the basis of solvency position of the firms:*** Short-term and long-term solvency position of the firms.
2. ***On the basis of profitability of the firms:*** The profitability of the firms are studied on the basis of the total capital employed, total asset employed and so on.
3. ***On the basis of effectiveness of the firms:*** The effectiveness is studied through the turnover ratios — Stock turnover ratio, Debtor turnover ratio and so on.
4. ***Capital structure ratios:*** The capital structure position are analysed through leverage ratios as well as coverage ratios.

6.3.1 Short-term Solvency Ratios

To study the short-term solvency or liquidity of the firm, the following are various ratios:

1. Current Assets Ratio
2. Acid Test Ratio or Quick Assets Ratio

Defensive Interval Ratio

Current Assets Ratio

It is one of the important accounting ratios to find out the ability of the business fleeces to meet out the short financial commitment. This is the ratio establishes the relationship in between the current assets and current liabilities.

Did u know? **What is meant by current assets?**

Current assets are nothing but available in the form of cash, equivalent to cash or easily convertible in to cash.

What is meant by the current liabilities?

Current liabilities are nothing but short-term financial resources or payable in short span of time within a year.

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Example: Company XYZ has current assets worth of ₹ 5 lac, while the liabilities amount to ₹ 3 lac. What is the current ratio of the firm?

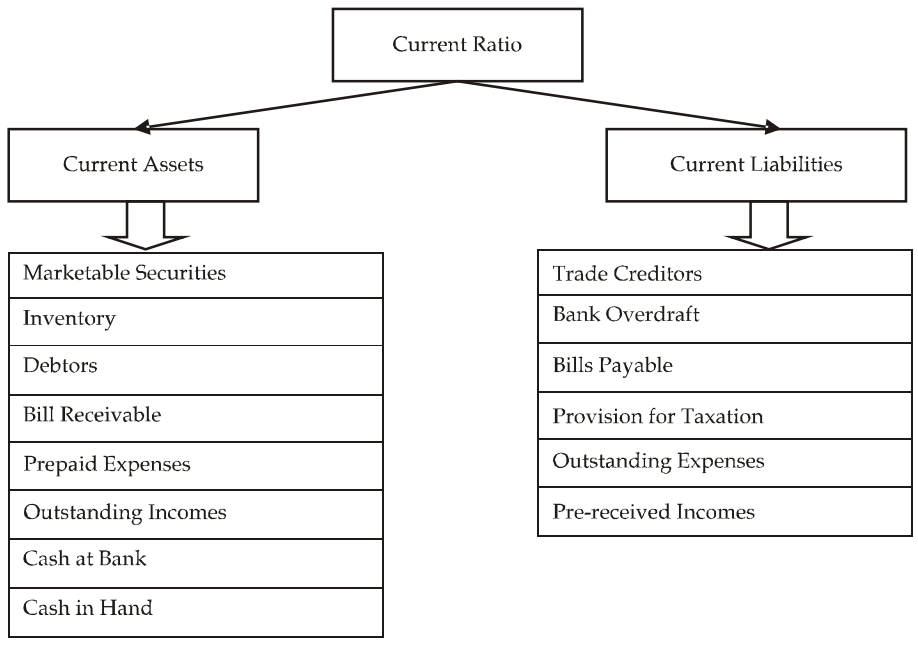
Solution:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$= 5/3 = 1.666 \text{ (approx)}$$

Notes

Figure 6.2



Notes **Standard norm of the current ratio:**

The ideal norm is 2:1; which means that every one rupee of current liability is appropriately covered by two rupees of current assets.

High ratio leads to greater the volume of current assets more than the specified norm denotes that the firm possesses excessive current assets than the requirement portrays idle funds invested in the current assets.

A big limitation of current ratio is that under this ratio, the current assets are equally weighed against each other to match the current liabilities. One rupee of cash is equally weighed at par with the one rupee of closing stock, but the closing stock and prepaid expenses cannot be immediately realized like cash and marketable securities.

Acid Test Ratio/Quick Assets Ratio

It is a ratio expresses the relationship in between the quick assets and current liabilities. This ratio is to replace the bottleneck associated with the current ratio. It considers only the liquid assets which can be easily translated into cash to meet out the financial commitments.

$$\text{Acid Test Ratio (Quick Assets Ratio)} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

Liquid Asset = Current Assets – (Closing Stock + Prepaid Expenses)

Notes

Example: A company has a closing stock of ₹ 30,000 while its prepaid expenses are ₹ 5000. What will be its quick assets ratio if the current assets are worth ₹ 50000 while current liabilities are worth ₹ 15000?

Solution:

Liquid Asset = Current Assets – (Closing Stock + Prepaid Expenses)

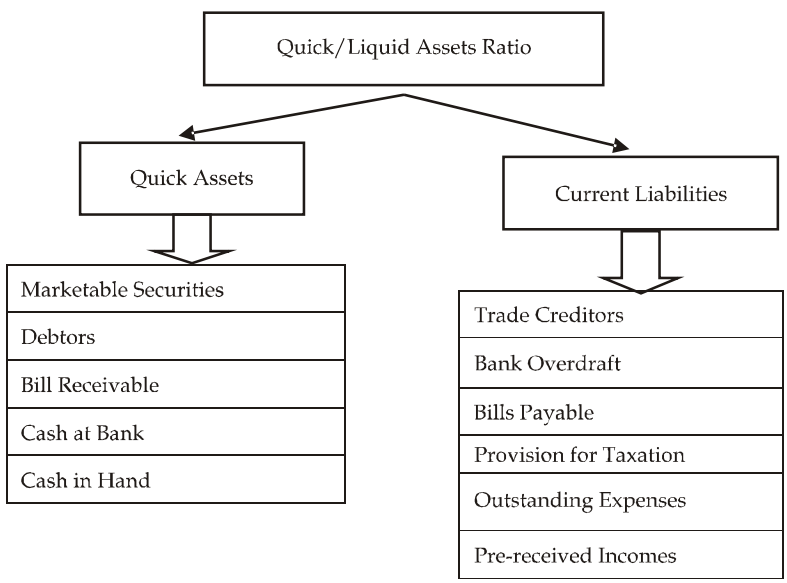
= 50000 – (30000 + 5000)

= 15000

$$\text{Quick Assets Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

= 15000/15000 = 1:1

Figure 6.3



Notes **Standard norm of the ratio:**

The ideal norm is 1:1 which means that one rupee of current liabilities is matched with one rupee of quick assets.

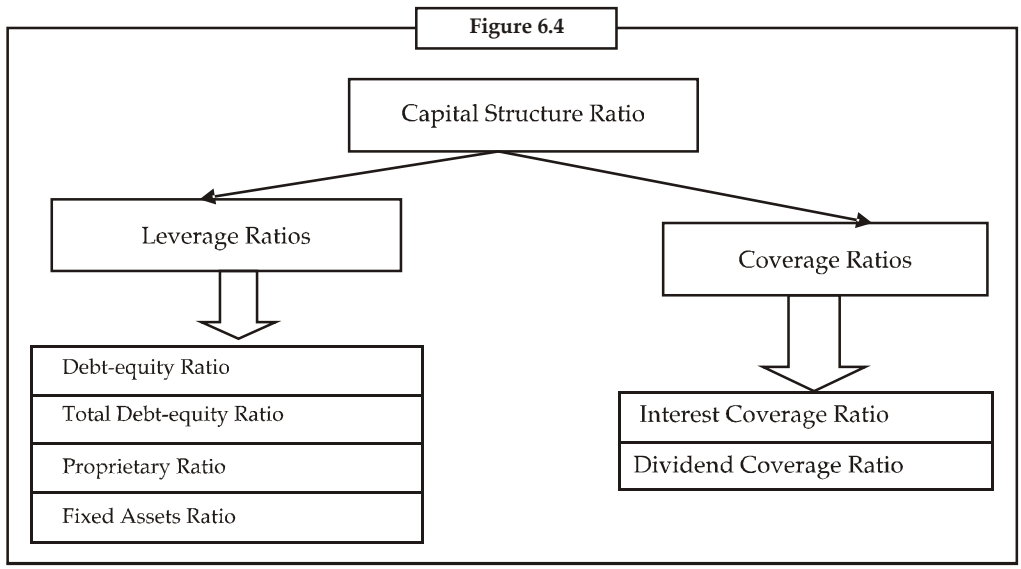
6.3.2 Capital Structure Ratios

The capital structure ratios are classified into two categories:

1. ***Leverage Ratios:*** Long-term solvency position of the firm — Principal repayment.
2. ***Coverage Ratios:*** Fixed commitment charge solvency of the firm — Dividend coverage and Interest coverage.

Notes

Figure 6.4



Under the capital structure ratios, the composition of the capital structure is analysed only in the angle of long term solvency of the firm.

Leverage Ratios

Debt-equity Ratio

It is the ratio expresses the relationship between the ownership funds and the outsiders' funds. It is more specifically highlighted that an expression of relationship in between the debt and shareholders' funds. The debt-equity ratio can be obviously understood into two different forms:

1. Long-term debt-equity ratio
2. Total debt-equity ratio

Let us understand each of them one by one.

Long-term Debt-equity Ratio

It is a ratio expressing the relationship in between the outsiders' contribution through debt financial resource and shareholders' contribution through equity share capital, preference share capital and past accumulated profits. It reveals the cover or cushion enjoyed by the firm due to the owners' contribution over the outsiders' contribution.

$$\text{Debt-equity Ratio} = \frac{\text{Debt (Long-term Debt = Debentures/Term Loans)}}{\text{Net Worth/Equity (Shareholders' Fund)}}$$

Example: The long-term debt of company ABC is ₹ 3 crores and the networth of the company is ₹ 5 crores. What is the long-term debt-equity ratio of ABC?

Solution:

$$\text{Long-term debt-equity Ratio} = \frac{\text{Debt}}{\text{Net Worth}} = 3/5 = .6$$

Notes

Higher ratio indicates the riskier financial status of the firm which means that the firm has been financed by the greater outsiders' fund rather than that of the owners' fund contribution and vice-versa.

Notes **Standard norm of the Debt-Equity Ratio:**

The ideal norm is 1:2 which means that every one rupee of debt finance is covered by two rupees of shareholders' fund.

The firm should have a minimum of 50% margin of safety in meeting the long-term financial commitments. If the ratio exceeds the specification, the interest of the firm will be ruined by the outsiders' during the moment at when they are unable to make the payment of interest in time as per the terms of agreement reached earlier. During the moment of liquidation, the greater ratio may facilitate the creditors to recover the amount due lesser holding held by the owners.

Total Debt-equity Ratio

The ultimate purpose of the ratio is to express the relationship total volume of debt irrespective of nature and shareholders' funds. If the owners' contribution is lesser in volume in general irrespective of its nature leads to worse situation in recovering the amount of outsiders' contribution during the moment of liquidation.

$$\text{Total Debt-equity Ratio} = \frac{\text{Short-term Debt + Long-term Debt}}{\text{Equity (Shareholders' Fund)}}$$

Example: The long-term debt of company ABC is ₹ 3 crores and the networth of the company is ₹ 5 crores. If the company has a short-term debt of ₹ 1 crore, what is the total debt-equity ratio of ABC?

Solution:

$$\text{Total Debt-equity Ratio} = \frac{\text{Short-term Debt + Long-term Debt}}{\text{Equity(Shareholders' Fund)}} = \frac{1+3}{5} = 4:5$$

Proprietary Ratio

The ratio illustrates the relationship in between the owners' contribution and the total volume of assets. In simple words, how much funds are contributed by the owners in financing the assets of the firm. Greater the ratio means that greater contribution made by the owners' in financing the assets.

$$\text{Proprietary Ratio} = \frac{\text{Owners' Funds or Equity or Shareholders' Funds}}{\text{Total Assets}}$$

Notes

Notes **Standard Norm of the ratio:**

Higher the ratio, better is the position

Higher ratio is better position for the firm as well as safety to the creditors.

Example: The networth of company ABC is ₹ 30 crores and the total assets are worth ₹ 10 crores. What is the proprietary ratio of the firm?

Solution:

$$\text{Proprietary Ratio} = \frac{\text{Owners' Funds or Equity or Shareholders' Funds}}{\text{Total assets}} = \frac{30}{10} = 3:1$$

The ratio shows that the firm is in quite a good financial position.

Fixed Assets Ratio

The ratio establishes the relationship in between the fixed assets and long-term source of funds. Whatever the source of long-term funds raised should be used for the acquisition of long-term assets; it means that the total volume of fixed assets should be equivalent to the volume of long term funds i.e. the ratio should be equal to 1.

$$\text{Fixed Assets Ratio} = \frac{\text{Shareholders' Funds + Outsiders' Funds}}{\text{Net Fixed Assets}}$$

If the ratio is lesser than one means that the firm made use of the short-term fund for the acquisition of long-term assets. If the ratio is greater than one means that the acquired fixed assets are lesser in quantum than that of the long-term funds raised for the purpose. In other words, the firm makes use of the excessive funds for the built of current assets.

Notes **Standard norm of the ratio:**

The ideal norm of the ratio is 1:1, which means that the long-term funds raised are utilised for the acquisition of long-term assets of the enterprise.

It facilitates to understand obviously about the over capitalization or under capitalization of the assets of the enterprise.

Example: The networth of company ABC is ₹ 30 crores and the net fixed assets are worth ₹ 100 crores. If the outsider's funds are worth ₹ 70 crores, what is the fixed assets ratio of the firm?

Solution:

$$\text{Fixed Assets Ratio} = \frac{\text{Shareholders' Funds + Outsiders' Funds}}{\text{Net Fixed Assets}} = \frac{30+70}{100} = \frac{100}{100} = 1:1$$

Notes

Since the ratio is 1:1, it shows that the firm raises the long term funds utilises them only for the acquisition of long term assets of the enterprise.

Coverage Ratios

These ratios are computed to know the solvency of the firm in making the periodical payment of interest and preference dividends. The interest and preference dividends are to be paid irrespective of the earnings available in the hands of the firm. In other words, these are known as fixed commitment charge of the firm.

Interest Coverage Ratio

The firms are expected to make the payment of interest on the amount of borrowings without fail. This ratio facilitates the prospective lender to study the strength of the enterprise in making the payment of interest regularly out of the total income. To study the capacity in making the payment of interest is known as interest coverage ratio or debt service coverage ratio.

The ability or capacity is analysed only on the basis of Earnings Before Interest and Taxes (EBIT) available in the hands of the firms.

Greater the ratio means that better the capacity of the firm in making the payment of interest as well as greater the safety and vice-versa.

$$\text{Interest Coverage Ratio} = \frac{\text{Earnings before Interest and Taxes}}{\text{Interest}}$$

Lesser the times the ratio means that meager the cushion of the firm which may lead to affect the solvency position of the firm in making payment of interest regularly.

Example: Mr Ashmit Ahuja had an earning of ₹ 3,00,000 before he paid the interests and taxes. What will be the interest coverage ratio if he pays ₹ 30,000 as an interest? What will it mean?

Solution:

$$\text{Interest Coverage Ratio} = \frac{\text{Earnings before Interest and Taxes}}{\text{Interest}} = \frac{3,00,000}{30,000} = 10:1$$

Since the interest coverage ratio is substantially high, it means that Mr. Ahuja has quite a good capacity in making the payment of interest and has a high safety.

Dividend Coverage Ratio

It illustrates the firms' ability in making the payment of preference dividend out of the earnings available in the hands of the firm after the payment of taxation. Greater the size of the profits after taxation, greater is the cushion for the payment of preference dividend and vice-versa.

The preference dividends are to be paid without fail irrespective of the profits available in the hands of the firm after the taxation.

$$\text{Dividend Coverage Ratio} = \frac{\text{Earnings after Taxation}}{\text{Preference Dividend}}$$

Notes

Example: Hindustan Manufacturers have to make a preference dividend of ₹ 60,000. The earnings after taxation is ₹ 3,00,000. What will be the Dividend coverage ratio? What does it mean?

Solution:

$$\text{Dividend Coverage Ratio} = \frac{\text{Earnings After Taxation}}{\text{Preference Dividend}} = \frac{3,00,000}{60,000} = 5:1$$

Since the value of the dividend coverage ratio is quite high, the company has a strong cushion for the payment of preference dividend.

6.3.3 Profitability Ratios

These ratios are measurement of the profitability of the firms in various angles, viz:

1. On sales
2. On investments
3. On capital employed and so on

While discussing the measure of profitability of the firm, the profits are normally classified into various categories:

1. Gross Profit
2. Net Profit
3. Operating Profit Ratio
4. Return on Assets Ratio
5. Return on Capital Employed

All profitability ratios are normally expressed only in terms of (%). The return is normally expressed only in terms of percentage which warrants the expression of this ratio to be also in percentage.

Gross Profit Ratio

The ratio elucidates the relationship in between the gross profit and sales volume.

It facilitates to study the profit earning capacity of the firm out of the manufacturing or trading operations.

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

Example: Om enterprises has earned a gross profit of ₹ 6,00,000 in the first quarter. Calculate the gross profit ratio if the corresponding sales amounted to a value of ₹ 30,00,000. What does it imply?

Solution:

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100 = \frac{6,00,000}{30,00,000} \times 100 = 20:1$$

The ratio implies that the firm has earned good profits out of sales in the first quarter.

Notes

Notes **Standard norm of the ratio:**

Higher the ratio means that the firm has greater cushion in meeting the needs of preference dividend payment against Earnings After Taxation (EAT) and vice-versa.

Net Profit Ratio

The ratio expresses the relationship in between the net profit and sales volume. It facilitates to portray the overall operating efficiency of the firm. The net profit ratio is an indicator of over all earning capacity of the firm in terms of return out of sales volume.

$$\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Sales}} \times 100$$

Example: Om enterprises has earned a net profit of ₹ 3,00,000 in the first quarter. Calculate the net profit ratio if the corresponding sales amounted to a value of ₹ 30,00,000. What does it imply?

Solution:

$$\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Sales}} \times 100 = \frac{30,000}{30,00,000} \times 100 = 1:1$$

The ratio shows that the company is running on a no profit - no loss state.

Notes **Standard Norm of the Ratio:**

Higher the ratio, the better the position of the firm is, which means that the firm earns greater profits out of the sales and vice-versa.

Operating Profit Ratio

The operating ratio is establishing the relationship in between the cost of goods sold and operating expenses with the total sales volume.

$$\text{Operating Ratio} = \frac{\text{Cost of Goods Sold + Operating Expenses}}{\text{Net Sales}} \times 100$$

Example: The cost of goods sold by Mangamal operators is ₹ 2,000. What will be the operating ratio of the firm if the operating expenses are ₹ 50,000 and net sales is that of ₹ 5,00,000? What does it mean?

Solution:

$$\text{Operating Ratio} = \frac{\text{Cost of goods sold + Operating expenses}}{\text{Net sales}} \times 100 = \frac{2,000 + 50,000}{5,00,000} = 1:2$$

Since the ratio is quite low, this means that the firm is in quite favourable position and thus has a high margin of operating profit.

Notes

Notes

Standard norm of the ratio:

Lower the ratio, the more favourable and better the firm's position is, which highlights the percentage of absorption, cost of goods sold and operating expenses out of sales and vice versa. The lower ratio leads to a higher margin of operating profit.

Return on Assets Ratio

This ratio portrays the relationship in between the earnings and total assets employed in the business enterprise. It highlights the effective utilization of the assets of the firm through the determination of return on total assets employed.

$$\text{Return on Assets} = \frac{\text{Net Profit After Taxes}}{\text{Average Total Assets}} \times 100$$

Example: If one company has an income of ₹ 1 crore and total assets of ₹ 10,00,000, what will be the return on assets if net profit after taxes is ₹ 500000?

Solution:

$$\text{Return on Assets} = \frac{\text{Net Profit After Taxes}}{\text{Average Total Assets}} \times 100 = \frac{5,00,000}{1,00,0000} \times 100 = 50\%$$

Notes

Standard norm of the ratio:

Higher the ratio illustrates that the firm has greater effectiveness in the utilization of assets, means greater profits reaped by the total assets and vice-versa.

Return on Capital Employed

The ratio illustrates that how much return is earned in the form of Net profit after taxes out of the total capital employed. The capital employed is nothing but the combination of both non current liabilities and owners' equity. The ratio expresses the relationship in between the total earnings after taxation and the total volume of capital employed.

$$\text{Return on Total Capital Employed} = \frac{\text{Net Profit After Taxes}}{\text{Total Capital Employed}} \times 100$$

Notes

Standard norm of the ratio:

Higher the ratio is better the utilization of the long term funds raised under the capital structure means that greater profits are earned out of the total capital employed.

Example: In the previous example, if the total capital employed is worth ₹ 25,00,000, what is the return on total capital employed?

Notes

Solution:

$$\text{Return on Total Capital Employed} = \frac{\text{Net Profit After Taxes}}{\text{Total Capital Employed}} \times 100 = \frac{5,00,000}{25,00,000} \times 100 = 20\%$$

6.3.4 Turnover Ratios

Turnover ratios can be of following types:

Activity Turnover Ratio

It highlights the relationship in between the sales and various assets. The ratio indicates that the rate of speed which is taken by the firm for converting the assets into sales.

Stock Turnover Ratio

The ratio expresses the speed of converting the stock into sales. In other words, how fast the stock is being converted into sales in a year. The greater the ratio of conversion leads to lesser the number of days/weeks/months required to convert the stock into sales.

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}} \text{ or } \frac{\text{Sales}}{\text{Closing Stock}}$$

Notes **Standard norm of the ratio:**

Higher the ratio is better the firm in converting the stock into sales and vice-versa.

The next step is to find out the number of days or weeks or months taken or consumed by the firm to convert the stock into sales volume.

$$\text{Stock Velocity} = \frac{\text{365 days /52 weeks /12 months}}{\text{Stock Turnover Ratio}}$$

Notes **Standard norm of the ratio:**

Lower the duration is better the position of the firm in converting the stock into sales and vice-versa.

Example: The cost of goods sold is ₹ 500,000. The opening stock is ₹ 40,000 and the closing stock is ₹ 60,000 (at cost). Calculate inventory turnover ratio.

Solution:

$$\text{Average Stock} = \frac{\text{Opening Stock + Closing Stock}}{2} = \frac{40,000 + 60,000}{2} = 50,000$$

$$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average stock}} = \frac{5,00,000}{50,000} = 10:1$$

Notes

Debtors Turnover Ratio

This ratio exhibits the speed of the collection process of the firm in collecting the overdues amount from the debtors and against Bills receivables. The speediness is being computed through debtors velocity from the ratio of Debtors Turnover Ratio.

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Debtors}} \text{ or } \frac{\text{Net Credit Sales}}{\text{Debtor + Bills Receivable}}$$

Notes

Standard norm of the ratio:

Higher the ratio is better the position of the firm in collecting the overdue means the effectiveness of the collection department and vice-versa.

Debtors velocity: This is an extension of the earlier ratio to denote the effectiveness of the collection department in terms of duration.

$$\text{Debtors Velocity} = \frac{\text{365 days /52 weeks /12 months}}{\text{Debtor Turnover Ratio}}$$

Notes

Standard norm of the ratio:

Lesser the duration shows greater the effectiveness in collecting the dues which means that the collection department takes only minimum period for collection and vice-versa.

Example: Sundaram & Co. Sells goods on cash as well as credit basis. The following particulars are extracted from the books of accounts for the calendar 2010:

Particulars	₹
Total Gross sales	2,00,000
Cash Sales (included in above)	40,000
Sales Returns	14,000
Total Debtors	18,000
Bills Receivable	4,000
Provision for Doubtful Debts	2,000
Total Creditors	20,000

Calculate average collection period.

Solution:

To find out the average collection period, first debtors turnover ratio has to computed

$$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Bills Receivable + Debtors}}$$

$$\text{Net Credit Sales} = \text{Gross Sales} - \text{Cash Sales} - \text{Sales Return}$$

$$= 2,00,000 - 40,000 - 14,000 = 1,46,000$$

Notes

$$\text{Debtor Turnover Ratio} = \frac{1,46,000}{4,000 + 18,000} = 6.64 \text{ times}$$

$$\text{Debtors Velocity} = \frac{365 \text{ days}}{\text{Debtors Turnover Ratio}} = \frac{365 \text{ days}}{6.64 \text{ times}} = 55 \text{ days}$$

Creditors Turnover Ratio

It shows effectiveness of the firm in making use of credit period allowed by the creditors during the moment of credit purchase.

$$\text{Creditors Turnover Ratio} = \frac{\text{Credit Purchase}}{\text{Average Creditors}} \text{ or } \frac{\text{Credit Purchase}}{\text{Bills Payable + Sundry Creditors}}$$

Notes **Standard norm of the ratio:**

Lesser the ratio is better the position of the firm in liquidity management means enjoying the more credit period from the creditors and vice-versa.

$$\text{Creditors Velocity} = \frac{365 \text{ days} / 52 \text{ weeks} / 12 \text{ months}}{\text{Creditors Turnover Ratio}}$$

Notes **Standard norm of the ratio:**

Greater the duration is better the liquidity management of the firm in availing the credit period of the creditors and vice versa.

Example: Find out the value of creditors from the following:

Sales ₹1,00,000	Opening stock ₹10,000
Gross profit on sales 10%	Closing stock ₹20,000
Creditors velocity 73 days	Bills payable ₹16,000

Note: All purchases are credit purchases

Solution: To find out the volume of purchases, the formula of cost of goods sold should be taken into consideration.

Cost of goods sold = Opening Stock + Purchases – Closing Stock

= 10,000 + Purchases – 20,000

Cost of goods sold = Sales – Gross Profit

= 1,00,000 – 10% on 1,00,000 = 90,000

The next step is to apply the found value in the early equation

Purchases = 90,000 – 10,000 + 20,000 = 1,00,000

To find out the value creditors, the creditor velocity and creditors turnover ratio

Notes

$$\text{Creditors Velocity} = \frac{365 \text{ days}}{\text{Creditors Turnover Ratio}}$$

$$\text{Creditors Turnover Ratio} = \frac{\text{Credit Purchases}}{\text{Bills Payable + Sundry Creditors}}$$

$$= \frac{1,00,000}{16,000 + \text{Sundry Creditors}}$$

The next step is to find out the sundry creditors, the reversal process to be adopted

$$73 \text{ days} = \frac{365 \text{ days}}{\text{Creditors Turnover Ratio}}$$

$$\text{Creditors Turnover Ratio} = \frac{365 \text{ days}}{73 \text{ days}} = 5 \text{ times}$$

The next step is to substitute the found value in the equation of creditors turnover ratio

$$16,000 + \text{Sundry creditors} = \frac{₹1,00,000}{5}$$

$$\text{Sundry Creditors} = 20,000 - 16,000 = 4,000$$

Task

From the following particulars, prepare trading, profit and loss account and a balance sheet.

Current ratio	3
Liquid ratio	1.8
Bank overdraft	₹ 20,000
Working capital	₹ 2,40,000
Debtors velocity	1 month
Gross profit ratio	20%
Proprietary ratio (Fixed assets/share holders' fund)	.9
Reserves and surpluses	.25 of share capital
Opening stock	₹ 1,20,000; 8%
Debentures	₹ 3,60,000
Long term investments	₹ 2,00,000
Stock turnover ratio	10 times
Creditors velocity	1/2 month
Net profit to share capital	20%

Notes

Case Study

Evaluation of Ford Motors Company

The success of Ford Motor Company, as well as other corporations, can be measured by analyzing the two most important goals of management, maintaining adequate liquidity and achieving satisfactory profitability. Liquidity can be defined as having enough money on hand to pay bills when they are due and to take care of unexpected needs for cash, while profitability refers to the ability of business to earn a satisfactory income. To enable investors and creditors to analyze these goals, Ford Motor Company distributes annual financial statements. With these financial statements, liquidity of Ford Motor Company is measured by analyzing factors such as working capitol, current ratio, quick ratio, receivable turnover, average days' sales uncollected, inventory turnover and average days' inventory on hand; whereas profitability analyzes the profit margin, asset turnover, return on assets, debt to equity, and return on equity factors.

Liquidity

Working Capital

Ford Motor Company's working capital fluctuated significantly in the years 1991-1995. This phenomenon is directly attributable to the fact that Financial Services current assets and current liabilities are not included in the total company current asset and current liability accounts. For example, the fluctuation from 1994 ($1.4 billion) to 1995 (-$1.5 billion) of $2.5 billion would suggest that Ford would be unable to pay liabilities during the current period. However, examination of the Financial Services side of the business reveals that surpluses of $13.6 billion existed in both 1994 and 1995, convincingly mitigating the figures indicating negative working capital.

Current Ratio & Quick Ratio

The current ratio in the years 1991-1995 has remained stable, fluctuating between 0.9 and 1.1. The quick ratio has also remained stable, fluctuating between 0.5 and 0.6. The larger fluctuation in the current ratio versus the quick ratio is caused by inventories being included in the asset side of the equation. Although inventories were significantly higher in both 1994 and 1995, current liabilities were also higher. In addition, marketable securities decreased substantially in 1994 and 1995. These factors resulted in the stability of both the current ratio and quick ratio.

Receivable Turnover & Average Days' Sales Uncollected

An examination of trends in Ford Motor Company's receivable turnover and average days' sales uncollected ratios reveal positive indicators of Ford's liquidity position. The receivable turnover, a function of net sales and average accounts receivable, has nearly doubled in the years 1993-1995 versus 1991-1992. This trend indicates an extensive increase of net sales in relation to accounts receivable. Receivables were relatively higher in 1994 than in any other of the five years, affecting the ratio for both 1994 and 1995. However, net sales increased 30% in 1994 and 34% in 1995 over the average net sales of 1991-1993. The average days' sales uncollected ratio has decreased significantly over the same period, from 16.9 days in 1991 to 9.7 days in 1995. The substantial decrease in average days' sales uncollected ratio coupled with the near doubling of the receivable turnover ratio is a reflection of Ford's strong sales and effective credit policies in years 1993-1995.

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Notes

Inventory Turnover & Average Days' Inventory on Hand

An examination of trends in the inventory turnover and average days' inventory on hand ratios also reveal positive indicators of Ford's liquidity position. Inventory turnover, a function of cost of goods sold and inventories, has remained stable between 14.0 and 16.0 times from 1992-1995. The average ratio over these four years (15.1 times) is 40% higher than that of 1991. The average days' inventory on hand, a derivative of the inventory turnover, has conversely decreased to stable level fluctuating between 23.5 and 26.0 days in the years 1992-1995. The operating cycle of Ford Motor Company has decreased significantly as the table below indicates.

	1991	1992	1993	1994	1995
Days:	50.8	29.0	33.8	31.1	34.3

Profitability

Profit Margin

Profit margin, which is net income divided by net sales, is a measure of how many dollars of net income is produced by each dollar of sales. Ford Motor Company had a substantial 4 year rise in profit margin. Using horizontal analysis, the profit margin increased 98% from 1991 to 1992, 566% from 1992 to 1993 and then 79% from 1993 to 1994. Although the profit margin from 1994 to 1995 decreased 26%, that is more than acceptable when you look at the substantial increases in the past few years. In the first year, Ford had a profit margin of -3.1%. That means for every dollar of sales, Ford lost $3.10. This is obviously not a good position to be in. During 1991 and then carried over into 1992, it cost Ford more money to make sales than it did when it recorded the income for those sales. They realized at this time it was important for them to keep things such as selling and administrative expenses lower, as well as the cost of sales, which included their production, manufacturing, and warehousing costs. By following a plan more complex than I can describe here, Ford steadily increased it's sales while it lowered it's expenses and it's cost of sales. This directly increased Ford's profit margin at a substantial rate within the next three years.

Asset Turnover

Asset turnover involves Ford's net sales divided by their average total assets. This ratio demonstrates the efficiency of assets used in producing sales. A company like Ford Motor Company has an enormous amount of assets. Computers to heavy equipment to buildings. All of those assets, plus many more, are all taken into consideration when figuring asset turnover. For example, Ford would like to know that if it decides to purchase 20 new computer-aided engineering stations for a cost of about $2,400,000, they would like to see a higher asset turnover to give them the proof that the investment is being used at maximum efficiency. Ford's asset turnover steadily increased in incremental amounts between the years of 1991-1995, but on average it was about .43 for the entire 5 year period. Using trend analysis to understand this ratio would give you a pretty good idea that the asset turnover of Ford Motor Company is stable. Trend analysis would give you an index number for 1992 of 100, while the index number for 1995 would be 112. These index numbers would result in a slightly positive but relatively straight line across the page. As a prospective investor this would probably cause you to investigate more deeply as to why Ford can't more efficiently use their assets to produce sales. As a current stockholder, this trend over the past five years may give you some comfort because of the incremental increases (at least it isn't going down).

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Notes

Return on Assets

Return on assets is a very good profitability ratio. It is comprehensive when compared to profit margin and asset turnover. Return on assets overcomes the deficiency of profit margin by relating the assets necessary to produce income and it overcomes the deficiency of asset turnover by taking into account the amount of income produced. Mathematically, return on assets is equal to net income divided by average total assets, or more simply put, profit margin times asset turnover. Ford can improve it's overall profitability by increasing it's profit margin, the asset turnover, or both. Looking at the numbers, it was actually Ford's increase in profit margin that really gave it the boost it needed to raise the return on assets from the black to the red. A steady increase in return on assets from -1.3% in 1991 to an acceptable 2.2% in 1994 is a good sign to investors. This steady climb of 169% resulted in an overall increase in the earning power of Ford Motor Company. Ford's increase in profitability shows satisfactory earning power which results in investors continuing to provide capital to it.

Debt to Equity

The debt to equity ratio shows the portion of the company financed by creditors in comparison to that financed by the stockholders. It is total liabilities divided by stockholder's equity. Ford's debt to equity ratio is relatively high. When measuring profitability, a high debt to equity ratio means the company has high debt and must earn more profit to protect the payment of interest to it's creditors. This high debt to equity ratio would also interest stockholders because it shows what part of the business is financed through borrowing or in other words, is debt financed. Of the five years we analyzed, the lowest debt to equity ratio was during 1991 (6.65) and the highest was in 1993 (11.71). In comparison to return on assets, a higher creditor financed year such as 1991 did not have an positive effect on profitability. It seemed that through increased borrowing in 1993, a higher debt to equity ratio was produced, but overall profitability also went up. Debt to equity is only one part in a full profitability analysis. The only real information that the debt to equity ratio can produce is it can show how much expansion is possible through the borrowing of long-term funds; basically it show's a company's long-term solvency. A higher debt to equity ratio essentially means that the company will be able to borrow less money. The company must rely more on stockholder investment. Ford was able to lower it's borrowing of funds from 1993 through 1994 and into 1995, while still effectively increasing it's profit margin and return on assets. This means Ford was able to use stockholder's investments to increase it's profitability rather than borrow the funds to do it.

Return on Equity

Return on equity is the ratio of net income divided by the average stockholder's equity. This ratio is of great interest to stockholders because it shows how much they have earned on their investment in the business. In the years of 1991 and 1992, stockholders lost money on their investment in Ford Motor Company. No one likes to lose money, even if it is a couple of cents on the dollar. A major stockholder could incur quite a loss because of this. In the next three years, return on equity was on the positive side, the peak being in 1994 when stockholders earned about 28% on every dollar invested. Quite a good return considering some investors are happy with a steady 8% return. Considering the previous years, the return on equity for Ford seems to be positive. Common knowledge dictates that most companies experience a downturn every now and then. Ford's investors are able to remain invested in the company because it's overall 5 year return on equity is high enough to give investors the high returns they seek. A return on equity consistently above 16% with a few negative years mixed in is certainly lucrative enough to maintain a strong

Contd...

Notes

profitability measurement and project a positive image to the investors of Ford Motor Company.

Conclusion

Although Ford Motor Company is one of the largest companies in the world, we can still attribute accounting trends to some of the key events in Ford's history. In 1990, Ford acquired Jaguar Cars, Ltd. Jaguar was a company suffering terrible loses due to poor quality, and lack of sales. Jaguar has been in the black since Ford purchased them until 1994. It is important to note that Ford's net income trend from 1991 to 1995 illustrates this. In 1992, the Ford Taurus became the number one selling car in the United States, which helped increase 1992 net earnings, and in 1994 the Ford Falcon was the top selling car in Australia, helping maintain the trend of increasing net income. It is important to note that Ford's net income has increased from 1991 to 1994, and then decreased in 1995. There are several possible causes for this change in the trend. In 1995, Ford acquired 20% equity in a major Chinese truck manufacturer, and launched several new vehicles; including the Ford Contour, Ford Mondeo, Mercury Mystique, Ford F-150, and Ford Taurus. These additional investments and expenses help explain the decrease in net income in 1995. Overall, the company has done well, and with reorganization in 1996 to decrease spending and increase efficiency, Ford is striving for future periods of growth.

Questions

1. What do you see as the main cause behind the result of trend analysis at Ford?
2. "Ford was able to use stockholder's investments to increase it's profitability rather than borrow the funds to do it". Justify the statement on the basis of the case.

Source: www.ghostpapers.com

Ratio Analysis

Short-term Solvency Ratios

1. $$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

2. $$\text{Quick Assets Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

Capital Structure Ratios

Leverage Ratios

1. Long-term debt-equity ratio

$$\text{Debt-equity Ratio} = \frac{\text{Debt (Long-term Debt = Debentures/Term Loans)}}{\text{Net Worth/Equity (Shareholders' Fund)}}$$

2. Total debt-equity ratio

$$\text{Total Debt-equity Ratio} = \frac{\text{Short-term Debt + Long-term Debt}}{\text{Equity (Shareholders' Fund)}}$$

Proprietary Ratio

$$\text{Proprietary Ratio} = \frac{\text{Owners' Funds or Equity or Shareholders' Funds}}{\text{Total Assets}}$$

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Notes

Fixed Assets Ratio

$$\text{Fixed Assets Ratio} = \frac{\text{Shareholders' Funds + Outsiders' Funds}}{\text{Net Fixed Assets}}$$

Coverage Ratios

1. $$\text{Interest Coverage Ratio} = \frac{\text{Earnings before Interest and Taxes}}{\text{Interest}}$$

2. $$\text{Dividend Coverage Ratio} = \frac{\text{Earnings after Taxation}}{\text{Preference Dividend}}$$

Profitability Ratios

1. $$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}} \times 100$$

2. $$\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Sales}} \times 100$$

3. $$\text{Operating Ratio} = \frac{\text{Cost of Goods Sold + Operating Expenses}}{\text{Net Sales}} \times 100$$

4. $$\text{Return on Assets} = \frac{\text{Net Profit After Taxes}}{\text{Average Total Assets}} \times 100$$

5. $$\text{Return on Total Capital Employed} = \frac{\text{Net Profit After Taxes}}{\text{Total Capital Employed}} \times 100$$

Turnover Ratios

Activity Turnover Ratio

1. $$\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Stock}} \text{ or } \frac{\text{Sales}}{\text{Closing Stock}}$$

2. $$\text{Stock Velocity} = \frac{\text{365 days /52 weeks /12 months}}{\text{Stock Turnover Ratio}}$$

3. $$\text{Average Stock} = \frac{\text{Opening Stock + Closing Stock}}{2}$$

Debtors Turnover Ratio

1. $$\text{Debtors Turnover Ratio} = \frac{\text{Net Credit Sales}}{\text{Average Debtors}} \text{ or } \frac{\text{Net Credit Sales}}{\text{Debtor + Bills Receivable}}$$

2. $$\text{Debtors Velocity} = \frac{\text{365 days /52 weeks /12 months}}{\text{Debtor Turnover Ratio}}$$

Creditors Turnover Ratio

1. $$\text{Creditors Turnover Ratio} = \frac{\text{Credit Purchase}}{\text{Average Creditors}} \text{ or } \frac{\text{Credit Purchase}}{\text{Bills Payable + Sundry Creditors}}$$

2. $$\text{Creditors Velocity} = \frac{\text{365 days /52 weeks /12 months}}{\text{Creditors Turnover Ratio}}$$

Notes

6.4 Summary

- Financial statement analysis can be explained as a method used by interested parties such as investors, creditors, and management to evaluate the past, current, and projected conditions and performance of the firm.
- Under the financial statement analysis, the information available are grouped together in order to cull out the meaningful relationship which is already available among them; for interpretation and analysis.
- To reveal qualitative information about the firm in terms of solvency, liquidity, profitability, etc., are extracted from the analysis of financial statements.
- Ratio analysis is one of the important tools of financial statement analysis to study the financial structure of the business fleeces.
- Financial ratio analysis is the calculation and comparison of ratios which are derived from the information in a company's financial statements.
- The level and historical trends of these ratios can be used to make inferences about a company's financial condition, its operations and attractiveness as an investment.
- Financial ratios are calculated from one or more pieces of information from a company's financial statements.
- A ratio gains utility by comparison to other data and standards.
- Ratios are classified as liquidity, leverage, profitability, activity, integrated and growth ratio.

6.5 Keywords

Assets: Assets are economic resources owned by business or company.

Balance Sheet or Positional Statement Ratios: These type of ratios are calculated from the balance sheet of the enterprise which normally reveals the financial status of the position i.e. short-term, long-term financial position, Share of the owners on the total assets of the enterprise and so on.

Balance Sheet: A balance sheet or statement of financial position is a summary of a person's or organization's balances.

Capital Structure Ratios: The capital structure position are analysed through leverage ratios as well as coverage ratios.

Current Assets: Current assets are in the form of cash, equivalent to cash or easily convertible into cash.

Current Liabilities: Current liabilities are short-term financial resources or payable in short span of time within a year.

Financial Statement: A written report which quantitatively describes the financial health of a company.

Firm: A business organization or the members of a business organization that owns or operates one or more establishments.

Income Statement Ratios: These ratios are computed from the statements of Trading, Profit & Loss account of the enterprise

6.6 Self Assessment

Notes

Choose the appropriate answer:

1. Financial statement analysis is to
   - (a) Inter firm comparison
   - (b) Intra firm comparison
   - (c) Industrial average comparison
   - (d) (a), (b) & (c)
2. Comparative financial statement analysis is into
   - (a) Comparison of income and position statements
   - (b) Common size statements
   - (c) Trend percentage analysis
   - (d) (a), (b) & (c)
3. Ratio is an expression of
   - (a) Quotient
   - (b) Time
   - (c) Percentage
   - (d) Fraction
   - (e) All of these
4. Accounting ratios are to study
   - (a) Accounting relationship among the variables
   - (b) The relationship in between the variables of financial statements
   - (c) The relationship in between the variables of financial statements for analysis and interpretations
   - (d) None of the above.
5. Accounting ratios are of
   - (a) Income statement ratios
   - (b) Positional statement ratios
   - (c) Both (a) & (b)
   - (d) None of the above
6. Solvency position of the firm studied and interpreted through
   - (a) Short-term solvency ratios
   - (b) Long-term solvency ratios
   - (c) Coverage ratios
   - (d) (a), (b) & (c)
7. Efficiency and effectiveness of the firm is studied through
   - (a) Liquidity ratios
   - (b) Leverage ratios
   - (c) Turnover ratios
   - (d) Profitability ratios
8. Profitability ratios to study the potential to earn profits
   - (a) On Assets
   - (b) On Capital employed
   - (c) On Sales
   - (d) (a), (b) & (c)
9. Standard norm of the current ratio is
   - (a) 2:1
   - (b) 1:5
   - (c) 1:2
   - (d) 3:1

Notes

10. Super quick assets do not include

(a) Closing stock (b) Prepaid expenses

(c) Sundry debtors (d) Both (a) & (b)

11. Standard norm of the Debt to Capital

(a) 1:2 (b) 1:1

(c) 2:1 (d) 1:5

12. The term accounting is used to describe relationships significantly which exist in between figures shown in a

(a) Balance sheet (b) Profit & Loss A/c

(c) Trading A/c (d) All of these

13. Which of the following is not a purpose of the Ratio Analysis?

(a) To study the liquidity of the firm

(b) To study the leverage position of the firm

(c) To interpret the profit earning capacity of the firm

(d) To identify the turnover of the firm

14. Ratio analysis is an outcome of analysis of historical transactions known as

(a) Premortem Analysis (b) Postmortem Analysis

(c) Antimortem Anlaysis (d) Mortem Analysis

15. Which of the following is not a ratio account on the basis of Financial Statements?

(a) Income Statement Ratios (b) Positional Statement Ratios

(c) Composite Mixture of Ratios (d) None of these

16. Which of the following is not a short-term solvency ratio?

(a) Current Assets Ratio (b) Defensive Interval Ratio

(c) Super Quick Assets Ratio (d) None of these

6.8 Review Questions

1. State the different types of financial statement analysis.

2. Is the firm satisfies the standard norm of the current asset ratio and liquid assets ratio?

M/s Shanmuga & Co
Balance sheet as on dated 31st March, 2010

Liabilities	₹	Assets	₹
Share capital	42,000	Fixed Assets Net	34,000
Reserve	3,000	Stock	12,400
Annual Profit	5,000	Debtors	6,400
Bank overdraft	4,000	Cash	13,200
Sundry creditors	12,000		
	66,000		**66,000**

Notes

3. Liquid Assets ₹ 65,000; Stock ₹ 20,000; Pre-paid expenses ₹ 5,000; Working capital ₹ 60,000. Calculate current assets ratio and liquid assets ratio.

4. The current ratio of Bicon Ltd. is 4.5:1 and liquidity ratio is 3:1 stock is ₹ 6,00,000. Find out the current liabilities.

5. From the following information, prepare a balance sheet show the workings

		₹
(a)	Working capital	75,000
(b)	Reserves and surplus	1,00,000
(c)	Bank overdraft	60,000
(d)	Current ratio	1.75
(e)	Liquid Ratio	1.15
(f)	Fixed assets to proprietors' fund	.75
(g)	Long term liabilities	Nil

(B.Com Madras, April 1980)

6.

Debtors velocity	3 months
Creditors velocity	2 months
Stock velocity	8 times
Capital turnover ratio	2.5 times
Fixed assets turnover ratio	8 times
Gross profit turnover ratio	25%

Gross profit in a year amounts to ₹ 1,60,000 .There is no long term loan or overdraft. Reserves and surplus amount to ₹ 56,000. Liquid assets are ₹ 1,94,666. Closing stock of the year is ₹ 4,000 more than the opening stock Bill receivable amount to ₹ 10,000 and bills payable to ₹ 4,000

(a) Find out

(i) Sales

(ii) Closing stock

(iii) Sundry debtors

(iv) Fixed assets

(v) Sundry creditors

(vi) Proprietors' fund.

(b) Draft the balance sheet with as many as details as possible.

7. You have been hired as an analyst for Mellon Bank and your team is working on an independent assessment of Daffy Duck Food In(c) (DDF In(c)) DDF In(c) is a firm that specializes in the production of freshly imported farm products from France. Your assistant has provided you with the following data for Flipper Inc. and their industry.

Notes

Ratio	2010	2009	2008	2010-Industry Average
Long-term debt	0.45	0.40	0.35	0.35
Inventory Turnover	62.65	42.42	32.25	53.25
Depreciation/Total Assets	0.25	0.014	0.018	0.015
Days' sales in receivables	113	98	94	130.25
Debt to Equity	0.75	0.85	0.90	0.88
Profit Margin	0.082	0.07	0.06	0.075
Total Asset Turnover	0.54	0.65	0.70	0.40
Quick Ratio	1.028	1.03	1.029	1.031
Current Ratio	1.33	1.21	1.15	1.25
Times Interest Earned	0.9	4.375	4.45	4.65
Equity Multiplier	1.75	1.85	1.90	1.88

In the annual report to the shareholders, the CEO of Flipper Inc wrote, "2008 was a good year for the firm with respect to our ability to meet our short-term obligations. We had higher liquidity largely due to an increase in highly liquid current assets (cash, account receivables and short-term marketable securities)." Is the CEO correct? Explain and use only relevant information in your analysis.

8. In the above question, what will you say when you are asked to provide the shareholders with an assessment of the firm's solvency and leverage. Be as complete as possible given the above information, but do not use any irrelevant information.
9. Firm A has a Return on Equity (ROE) equal to 24%, while firm B has an ROE of 15% during the same year. Both firms have a total debt ratio (D/V) equal to 0.8. Firm A has an asset turnover ratio of 0.9, while firm B has an asset turnover ratio equal to 0.4. What can we analyse about the relationship between both the firms?
10. If a firm has ₹ 1,00,000 in inventories, a current ratio equal to 1.2, and a quick ratio equal to 1.1, what is the firm's Net Working Capital?
11. What can you say about the asset management of the firm discussed in question 6? Be as complete as possible given the above information, but do not use any irrelevant information.

Answers: Self Assessment

1.	(d)	2.	(d)
3.	(a)	4.	(c)
5.	(c)	6.	(d)
7.	(d)	8.	(c)
9.	(a)	10.	(d)
11.	(c)	12.	(d)
13.	(d)	14.	(b)
15.	(d)	16.	(d)

6.8 Further Readings

Notes

Books

B.M. Lall Nigam and I.C. Jain, *Cost Accounting*, Prentice-Hall of India (P) Ltd.

Hilton, Maher and Selto, *Cost Management*, 2nd Edition, Tata McGraw-Hill Publishing Company Ltd.

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M.N. Arora, *Cost and Management Accounting*, 8th Edition, Vikas Publishing House (P) Ltd.

Online links

www.authorstream.com

www.allinterview.com

Notes

Unit 7: Fund Flow Statement

CONTENTS

Objectives

Introduction

7.1 Meaning of Fund Flow Statement

7.2 Objectives of Fund Flow Statement Analysis

7.3 Steps in the Preparation of Fund Flow Statement

7.4 Schedule of Changes in Working Capital

7.5 Methods of Preparing Fund from Operations

7.5.1 Net Profit Method

7.5.2 Sales Method

7.6 Advantages of Preparing Fund Flow Statement

7.7 Limitations of Fund Flow Statement

7.8 Summary

7.9 Keywords

7.10 Self Assessment

7.11 Review Questions

7.12 Further Readings

Objectives

After studying this unit, you will be able to:

- Explain the objectives of fund flow statement analysis
- State the steps in the preparation of fund flow statement
- Prepare schedule of changes in working capital
- List the methods of preparing fund from operations
- Explain the advantages of preparing fund flow statement
- Know the limitations of fund flow statement.

Introduction

Every business establishment usually prepares the balance sheet at the end of the fiscal year which highlights the financial position of the yester years It is subject to change in the volume of the business not only illustrates the financial structure but also expresses the value of the applications in the liabilities side and assets side respectively. Normally, Balance sheet reveals the status of the firm only at the end of the year, not at the beginning of the year. It never discloses the changes in between the value position of the firm at two different time periods/dates.

Notes

The method of portraying the changes on the volume of financial position is the analysis of fund flow statement.

7.1 Meaning of Fund Flow Statement

In a narrow sense, the term fund means cash, and the fund flow statement depicts the cash receipts and cash disbursements/payments. It highlights the changes in the cash receipts and payments as a cash flow statement in addition to the cash balances i.e., opening cash balance and closing cash balance. Contrary to the earlier, the fund means working capital i.e. the differences between the current assets and current liabilities.

The term flow denotes the change. Flow of funds means the change in funds or in working capital. The change on the working capital leads to the net changes taken place on the working capital i.e. especially due to either increase or decrease in the working capital. Some of the transactions may lead to increase or decrease the volume of working capital. Some other transactions register neither an increase nor decrease in the volume of working capital.

According to Foulke, "A statement of source and application of funds is a technical device designed to analyse the changes to the financial condition of a business enterprise in between two dates."

Various facets of fund flow statement are as follows:

1. Statement of sources and application of funds
2. Statement changes in financial position
3. Analysis of working capital changes
4. Movement of funds statement
5. Depreciation charged on assets
6. Appropriation of profits to reserves
7. Payment of interim dividends
8. Payment and appropriations in relation to provisions for taxation/dividends where they are treated as non-current liabilities
9. Purchases of assets for cash, in exchange for current assets
10. Sale of assets at a profit/loss.

7.2 Objectives of Fund Flow Statement Analysis

Fund flow statement has following objectives:

1. It pinpoints the mobilization of resources and the further utilization of resources.
2. It highlights the financing of the general expansion of the business firms.
3. It exemplifies the utilization of debt finance in the structure of financing.
4. It portrays the relationship between the financing, investments, liquidity and dividend decision of the firm during the given point of time.

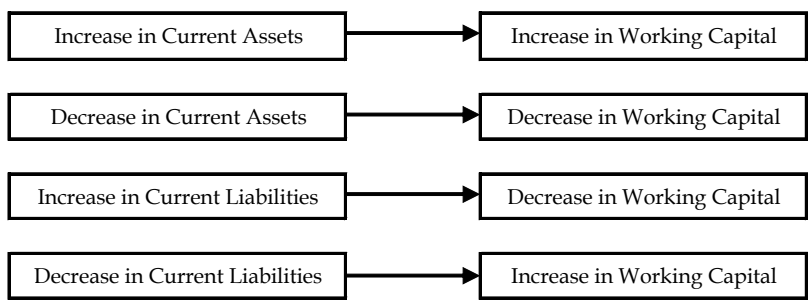
Notes

7.3 Steps in the Preparation of Fund Flow Statement

1. First and foremost step is to prepare the statement of changes in working capital i.e. to identify the flow of fund/movement of fund through the detection of changes in the volume of working capital.
2. Second step is the preparation of Non-current A/c items-Changes in the volume of Non-current A/cs have to be prepared only in order to quantify the flow fund i.e. either sources or application of fund.
3. Third step is the preparation Adjusted Profit & Loss A/c, which already elaborately discussed in the early part of the unit.
4. Last step is the preparation of fund flow statement.

7.4 Schedule of Changes in Working Capital

The ultimate purpose of preparing the schedule of changes in the working capital illustrates the changes in the volume of net working capital which envisages either sources or application of fund. The schedule of changes are focused as follows:



Particulars	Previous Year	Current Year	Increase in Working Capital (+)	Decrease in Working Capital (-)
(A) Current Assets: Cash in Hand Cash at Bank Marketable Securities Bills Receivable Sundry Debtors Closing Stock Prepaid Expenses				
(B) Current Liabilities: Creditors Bills Payable Outstanding expenses Pre received Income Provision for doubtful and bad debts				
Net Working Capital(A-B) Increase/Decrease Working Capital				

Important Adjustments

Notes

1. ***Provision for tax:*** At the time of preparation of fund flow statement, there are two approaches to treat this item. These are:

   (i) Treat it as a current liability

   (ii) Treat it as an appropriation of profit

   As per first approach, the provision for taxation is assumed as a current liability. Therefore, it must be shown in the schedule of working capital changes. All the information relating taxation should be ignored as in the case of other current liabilities. In this approach, the provision, for taxation is neither used in the fund from operation nor in the uses of fund in the Fund Flow Statement as payment of tax liability.

   Under second approach, the provision for taxation is treated as an appropriation of profit. Provision for taxation is not shown in the Schedule of Working Capital Changes. As other appropriations it is added back in the net profits to calculate the Fund from Operation. To find the payment of tax of the year provision for taxation account is prepared. Payment of the tax of the year is disclosed in the Uses of Fund in the Fund Flow Statement. Provision for taxation a/c is prepared as hereunder:

Provision for Taxation

	₹		₹
To Cash (Payment of tax)	-	By balance b/d	-
(Balancing figure)		By P & L a/c (current year's provision)	-
To balance c/d	-		
	–		–

   However, it is advised to the students to adopt the first approach. This approach is more convenient for the students. Provision for taxation is also disclosed under the heading of current liabilities and provisions in the Balance Sheet of the Company as per the Indian Companies Act. This approach is adopted in the book also.

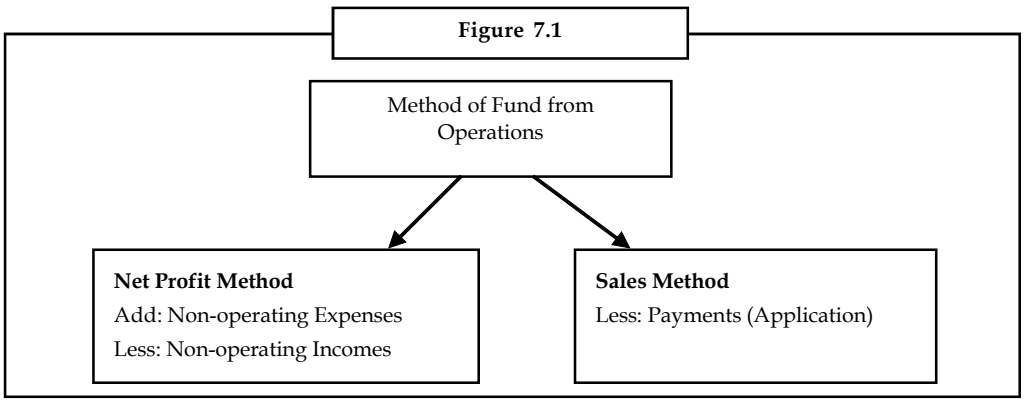
2. ***Proposed Dividend and Dividend Paid:*** Dividend paid during the year should be treated as an application of fund, therefore, it must be shown in the fund flow statement. Proposed dividend is not accumulated therefore, it should not be treated as a current liability. It is assumed that the proposed dividend of the previous year is paid during the year whether it is said or not. Therefore, it will be a use of fund. Proposed dividend and interim dividend are the appropriations against profit. So to calculate the fund from operation it must be added back to net profits like other appropriations. It must be noted that the closing balance of the P & L account of a year should be equal to the opening balance of P & L A/c in the next year. If there is any difference between these two figures, difference should be treated as payment of dividend during the year.

3. ***Provision for Current Assets:*** There are two treatments for the provisions for current assets as Provision for Bad and Doubtful Debts and Provision for Loss of Stock etc. As per first treatment such a provision is assumed as current liability and is shown in the Schedule of Working Capital Changes and concerned gross assets are shown in the schedule. As per second treatment it is subtracted from the concerned current assets, then balance of current assets is shown in the Schedule of Working Capital Changes. If there is excess provision, such a provision is treated appropriation. Its treatment will be like other appropriations.

Notes

7.5 Methods of Preparing Fund from Operations

Figure 7.1



The first method is widely used method by all in determining the volume of Fund from Operations (FFO).

7.5.1 Net Profit Method

Under the Net Profit Method, fund flow from operations can be computed. Under this method, fund from operations can be determined in two different ways:- The first method is through the statement format.

Net Profit from the Profit & Loss A/c	xxxxx
Add:	
(A) ***Non-funding Expenses:***	
Loss on Sale of Fixed Assets	xxxx
Loss on Sale of Long-term Investments	xxxx
Loss on Redemption Debentures/Preference Shares	xxxx
Discount on Debentures/Share	xxxx
(B) ***Non-operating Expenses:***	
Depreciation of Fixed Assets	xxxx
(C) ***Intangible Assets:***	
Amortization of Goodwill	xxxx
Amortization of Patent	xxxx
Amortization of Trade Mark	xxxx
(D) ***Fictitious Assets:***	
Writing off Preliminary Expense	xxxx
Writing off Discount on Shares/Debentures	xxxx
(E) ***Profit Appropriation***	
Transfer to General Reserve	xxxx
Less:	
(F) ***Non-funding Profits:***	
Profit on Sale of Fixed Assets	xxxx

Notes

Profit on Sale of Long-term Investments	xxxx
Profit on Redemption Debentures/Preference Shares	xxxx
(G) ***Non-operating Incomes:***	
Dividend Received	xxxx
Interest Received	xxxx
Rent Received	xxxx
Fund From Operations/Fund Lost in Operations	xxxxx

The second method of determining the fund from operations under the first classification is the Accounting Statement Format.

Adjusted Profit & Loss A/c

Dr **Cr**

To Depreciation	xxxx	By Opening Balance Profit	xxxx
To Goodwill Written off	xxxx	By Profit on Sale of Fixed Assets	xxxx
To Patent Written off	xxxx	By Profit on Sale of Investments	xxxx
To Loss on Sale of Fixed Asset	xxxx	By Profit on Redemption of Liability	xxxx
To Loss on Sale of Investment	xxxx	By Transfer from General Reserve	xxxx
To Loss on Redemption of Liability	xxxx	By Balancing Figure fund from Operations (FFO)	xxxx
To Preliminary Expenses off	xxxx		
To Proposed Dividend	xxxx		
To Transfer to General Reserve	xxxx		
To Current Year Provision for Taxation	xxxx		
To Current Year Provision for Depreciation	xxxx		
To Balancing Figure (Fund Lost in Operations)	xxxx		

7.5.2 Sales Method

Under this method, the following is the statement format is used to arrive fund flow from operations.

Sales	xxxxx
Stock at the end	xxxxx
Less:	
Application:	
Stock at Opening	xxxx
Net Purchases(Purchase-Returns)	xxxx
Wages	xxxx
Salaries	xxxx
Telephone expenses	xxxx
Electricity charges	xxxx

Notes

Office stationery expenses	xxxx
Other operating cash expenses	xxxx
Fund from Operations	

Example: From the following details calculate Funds from Operations:

	₹
Salaries	10,000
Rent	6,000
Refund of Tax	6,000
Profit on Sale of Building	10,000
Depreciation on Plant	10,000
Provision for Taxation	8,000
Loss on Sale of Plant	4,000
Closing Balance of Profit & Loss A/c	1,20,000
Opening Balance on Profit & Loss A/c	50,000
Discount on Issue of Debentures	4,000
Provision for Bad Debts	2,000
Transfer to General Reserve	2,000
Preliminary Expenses written off	6,000
Goodwill written off	4,000
Dividend Received	10,000
Proposed Dividend	12,000

Solution:

Calculation of Fund from Operation

First Method

Closing Balance of Profit & Loss A/c	1,20,000
Less: Opening Balance	50,000
Balance Forward	70,000
Add: Non-fund/Non-operating Charges	
Depreciation on Plant	10,000
Provision for Taxation	8,000
Loss on Sale of Plant	4,000
Discount on Issue of Debentures	4,000
Provision for Bad Debts	2,000
Transfer to General Reserve	2,000
Preliminary Expenses off	6,000
Goodwill Written off	4,000
Proposed Dividend	12,000
	1,22,000

Notes

Less: Refund of Tax	6,000
Profit on Sale of Building	10,000
Dividend Received	10,000
Fund from Operations	96,000

Second Method:

Adjusted Profit & Loss A/c

To Depreciation on Plant	10,000	By Opening Balance b/d	50,000
To Provision for Taxation	8,000	By Profit on Sale of Building	10,000
To Loss on Sale of Plant	4,000	By Dividend Received	10,000
To Discount on issue of debentures	4,000	By Refund of Tax	6,000
To Provision for bad debts	2,000	By Balancing Figure	96,000
To Transfer to general reserve	2,000	Fund from Operations	
To Preliminary expenses off	6,000		
To Goodwill written off	4,000		
To Proposed Dividend	12,000		
To Closing Profit c/d	1,20,000		
	1,72,000		1,72,000

The next step is to prepare the fund flow statement. The proforma of the fund flow statement:

Sources of Funds	Uses of Funds
• Funds from Business Operation	• Funds Lost in Operations
• Non-trading Incomes	• Redemption of Preference Share Capital
• Sale of Non-current Assets	• Repayment of Loans
• Sale of Long-term Investments	• Purchase of Long-term Investments
• Issue of Shares	• Purchase of Fixed Assets
• Acceptance of Deposits	• Payment of Taxes
• Long-term Borrowings	• Payment of Dividends
• Decrease in Working Capital	• Drawings
	• Loss of Cash
	• Increase in Working Capital

Example: From the following details prepare a statement showing Changes in Working Capital During 2009.

Balance Sheet of Pioneer Ltd.
as on 31st December

Liabilities	2008 (₹)	2009 (₹)	Assets	2008 (₹)	2009 (₹)
Share capital	5,00,000	6,00,000	Fixed assets	10,00,000	11,20,000
Reserves	1,50,000	1,80,000	Less: Depreciation	3,70,000	4,60,000
Profit and Loss A/c	40,000	65,000		6,30,000	6,60,000
Debentures	3,00,000	2,50,000	Stock	2,40,000	3,70,000
Creditors for goods	1,70,000	1,60,000	Book Debts	2,50,000	2,30,000
Provision for tax	60,000	80,000	Cash in hand	80,000	60,000
			Preliminary expenses	20,000	15,000
	12,20,000	**13,35,000**		**12,20,000**	**13,35,000**

(B.Com., Bharathidasan November,1986)

Notes

Solution:

Schedule of Changes in Working Capital

	2008	2009	Increase in Working Capital	Decrease in Working Capital
Current Asset:				
Stock	2,40,000	3,70,000	1,30,000	–
Book debts	2,50,000	2,30,000	–	20,000
Cash in hand	80,000	60,000	–	20,000
	5,70,000	**6,60,000**	**1,30,000**	**40,000**
Current liabilities:				
Creditors for goods	1,70,000	1,60,000	10,000	–
Working capital	4,00,000	5,00,000	1,40,000	40,000
Increase in working capital	1,00,000	–	–	1,00,000
	5,00,000	**5,00,000**	**1,40,000**	**1,40,000**

Example: From the following relating to Panasonic Ltd., prepare Funds Flow Statement.

Balance Sheet of Panasonic Ltd.
as on 31st December

Liabilities	2008 (₹)	2009 (₹)	Assets	2008 (₹)	2009 (₹)
Share capital	6,00,000	8,00,000	Fixed assets	3,80,000	4,20,000
Reserves	2,00,000	1,00,000	Accounts receivable	2,10,000	3,00,000
Retained earnings	60,000	1,20,000	Stock	3,00,000	3,90,000
Accounts payable	90,000	2,70,000	Cash	60,000	1,80,000
	9,50,000	**12,90,000**		**9,50,000**	**12,90,000**

Additional Information:

1. The company issued bonus shares for ₹ 1,00,000 and for cash ₹ 1,00,000.
2. Depreciation written off during the year ₹ 30,000.

Solution:

The first step is prepare the statement of Changes in Working Capital

Schedule of Changes in Working Capital

	2008	2009	Increase in Working Capital	Decrease in Working Capital
Current Asset:				
Cash	60,000	1,80,000	1,20,000	–
Stock in trade	3,00,000	3,90,000	90,000	–
Accounts receivable	2,10,000	3,00,000	90,000	–
	5,70,000	8,70,000		
Current Liabilities:				
Accounts payable	90,000	2,70,000		1,80,000

Contd...

Notes

Working capital	4,80,000	6,00,000	3,00,000	1,80,000
Increase in working capital	1,20,000			1,20,000
	6,00,000	**6,00,000**	**3,00,000**	**3,00,000**

The next step is to prepare the non-current account.

First non-current asset account should have to be prepared.

Dr **Fixed Assets A/c** Cr

Particulars	₹	Particulars	₹
To Balance b/d	3,80,000	By Depreciation (Adjusted Profit &Loss A/c)	30,000
To Cash (Purchase) Balancing fig.	70,000	By Balance c/d	4,20,000
	4,50,000		**4,50,000**

The next non-current account is that non-current liability which is nothing but Share capital

Dr **Share Capital A/c** Cr

Particulars	₹	Particulars	₹
To Balance c/d	8,00,000	By Cash (Issue of shares)	1,00,000
		By General reserve	1,00,000
		By Balance b/d	6,00,000
	8,00,000		**8,00,000**

And another non-current account is to be prepared that general reserve account.

Dr **General Reserve A/c** Cr

Particulars	₹	Particulars	₹
To Share capital	1,00,000	By Balance b/d	2,00,000
To Balance c/d	1,00,000		
	2,00,000		**2,00,000**

The next step is to prepare the Adjusted Profit & Loss A/c.

Dr **Adjusted Profit & Loss A/c** Cr

Particulars	₹	Particulars	₹
To (Fixed Assets) depreciation	30,000	By Balance b/d (Retained Earnings)	60,000
To Balance c/d	1,20,000	By Fund from operation Balancing fig..	90,000
	1,50,000		**1,50,000**

The next step is to prepare the fund flow statement of the enterprise.

Notes

Fund Flow Statement

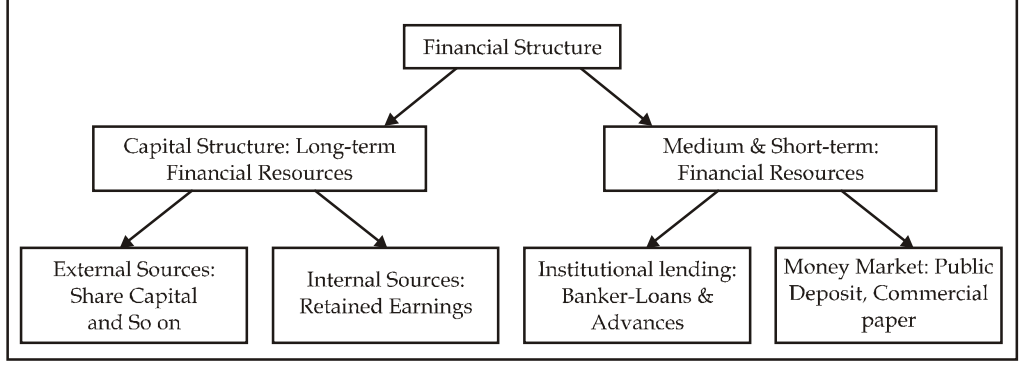
Sources	₹	Applications	₹
Issue of Shares	1,00,000	Purchase of Land	70,000
Funds from operation	90,000	Increase in working capital	1,20,000
	1,90,000		**1,90,000**

7.6 Advantages of Preparing Fund Flow Statement

The Fund Flow Statement has the following advantages:

1. ***Illustrative statement of financing:*** It is a statement which highlights the role of various kinds of financing not only in the dimension of project development and expansion but also growth rate of the organization.

Figure 7.2



2. ***Structured analysis on the working capital of a firm:*** It is the only statement to study the changes in the working capital in between two different periods from the balance sheet of a firm through structured analysis on the basis of working capital position.

3. ***Fulfills the primary objective of the financial management:*** It not only elucidates the mode of financing but also the application of resources after rising. It answers to the following queries, viz.

   (a) How the outsider's liabilities are redeemed?

   (b) What is the role of the fund from operation generated?

   (c) How the raised funds applied into business?

   (d) How the decrease in working capital was applied?

   (e) What is the mode of raising the financial resources for an increase in the working capital?

4. ***Facilitation through financial planning:*** The projected fund flow statement from the past performance facilitates the firm to anticipate the future requirement of financial resources. It guides the management to prioritize the application in the future to the tune of scarce resources.

5. ***Guide to working capital management:*** It acts as a guide to the management to maintain the working capital at optimum level through either purchase or sale of marketable securities during the periods of adequate and inadequate working capital respectively.

Notes

6. ***Indicator of past track of the firm:*** The insight on the financial performance of the firm can be had by the lending institutions through fund flow statement at the time of extending financial assistance to the firm.

7.7 Limitations of Fund Flow Statement

Fund flow statement analysis has following limitations:

1. It is an extension of financial statements but it cannot be leveled with the emphasis of them.
2. It is not a resultant of the transaction instead it is an arrangement of among the available information.
3. Projected fund flow statement ever only to the tune of financial statements which are historic in feature.

Task

Discuss any non-current account transactions affecting the fund position of a firm of your choice.

7.8 Summary

- Fund flow statements summarize a firm's inflow and outflow of funds.
- Simply put, it tells investors where funds have come from and where funds have gone.
- The statements are often used to determine whether companies efficiently source and utilize funds available to them.
- Fund flow statements are prepared by taking the balance sheets for two dates representing the coverage period.
- The increases and decreases must then be calculated for each item. Finally, the changes are classified under four categories: (1) Long-term sources, (2) Long-term uses, (3) Short-term sources and (4) Short-term uses.
- It is also important to zero out the non-fund based adjustments in order to capture only the changes that are accompanies by flow of funds.
- However, income accrued but received and expenses incurred but not received reckoned in the profit and loss statement should not be excluded from the profit figure for the fund flow statement.
- Fund flow statements can be used to identify a variety of problems in the way a company operates.
- Meanwhile, a company that is using long-term money to finance short-term investments may not be efficiently utilizing its capital.

7.9 Keywords

Current Assets: Assets which are in the form of cash, equivalent to cash or easily convertible into cash.

Current Liabilities: Short-term financial resources of the firm.

Notes

Decrease in Working Capital: Decrease in Net working capital i.e. Excess of current liabilities over the current assets - Resources side of the fund flow.

Flow: Flow means changes occurred in between two different time periods.

Fund from Operations: Income generated from only operations.

Fund Lost in Operations: Loss incurred in the operations.

Fund: Fund means working capital.

Increase in Working Capital: Increase in Net working capital i.e. Excess of current assets over the current liabilities- Applications side of the fund flow.

Non-current Assets: Long-term assets.

Non-current Liabilities: Long-term financial resources.

Statement of changes in Working Capital: Enlisting the changes taken place in between the current assets and current liabilities of two different time horizons.

7.10 Self Assessment

Choose the appropriate answer:

1. Fund flow means a study of
   - (a) Working capital change
   - (b) Cash position change
   - (c) Long investment change
   - (d) Change in the current liabilities
2. Normally, working capital means
   - (a) Current assets — Current liabilities
   - (b) Current assets
   - (c) Gross working capital
   - (d) Net working capital
3. Increase in working capital
   - (a) Increase in current assets
   - (b) Increase net working capital
   - (c) Increase in current liabilities
   - (d) Increase in long-term source of financing
4. Adjusted profit and loss account is prepared for
   - (a) Determining the fund from operations
   - (b) Determining the fund lost in operations
   - (c) Either (a) or (b)
   - (d) None of the above

Notes

5. Fund flow statement is categorized into two parts
   (a) Fund inflow and Fund outflow
   (b) Cash inflow and Cash outflow
   (c) Sources and Applications
   (d) None of the above
6. Fund from operations is
   (a) Sources of the firm
   (b) Applications of the firm
   (c) Neither sources nor applications
   (d) None of the above
7. Purchase of plant and machinery ₹ 10 lakh through the issue of 1 Lakh shares at ₹ 10 per share; affect the following accounts:
   (a) Non-current asset and Non-current liabilities accounts
   (b) Non-current asset and Current liabilities accounts
   (c) Current asset account and Non-current liabilities accounts
   (d) Current asset and current liabilities accounts.
8. XYZ Ltd. has made a credit purchase of ₹ 1 lakh worth of goods led to ₹ 1 lakh worth of additional stock of tradable goods for the enterprise, leads to
   (a) Increase in the working capital – Applications
   (b) No change in the working capital position – Neither an application nor resource
   (c) Decrease in the working capital – Resource
   (d) None of the above
9. The meaning of the "To cash (Tax paid)" entry posted in the Provision for taxation account is
   (a) Last year taxation is paid through the current year provision
   (b) Current year taxation is paid through the current year provision
   (c) Last year tax is paid through the last year taxation
   (d) Current year taxation is paid through the last year provision
10. Profit on sale of the fixed assets are considered to be
    (a) Resource to the enterprise
    (b) Non-operating income
    (c) Application of the enterprise
    (d) None of the above
11. The treatment of current year depreciation with the closing balance of profit in determining the fund from operations
    (a) To be added

Notes

(b) To be multiplied

(c) To be deducted

(d) To be divided

12. The redemption bank term loan leads to change in the

(a) Non-current liability account and current asset account

(b) Current asset account and current liabilities account

(c) Non-current asset account and current liabilities account

(d) Non-current asset account and current liabilities account

13. Flow of funds means the change in

(a) Funds (b) Working capital

(c) Either (d) Both

14. Which of the following is not an objectives fund-flow analysis?

(a) It pinpoints the mobilization of resources and the further utilization of resources

(b) It highlights the financing of the general expansion of the business firms

(c) It exemplifies the utilization of debt finance in the structure of financing

(d) None of these.

15. Which of the following is not a source of fund?

(a) Purchase of Long-term Investments

(b) Acceptance of deposits

(c) Sale of Non-current Assets

(d) Decrease in Working Capital

7.11 Review Questions

1. From the following two Balance Sheet as at December 31, 2008 and 2009. Prepare the statement of sources and uses of funds.

	2008 (₹)	2009 (₹)	2008 (₹)	2009 (₹)
Liabilities				
Share capital	80,000	90,000		
Trade creditors	20,000	46,000		
Profit & Loss a/c	4,60,000	5,00,000		
Assets				
Cash			60,000	94,000
Debtors			2,40,000	2,30,000
Stock in trade			1,60,000	1,80,000
Land			1,00,000	1,32,000
	5,60,000	**6,36,000**	**5,60,000**	**6,36,000**

Notes

2. Balance Sheets of M/s Black and White as on 1-1-2009 and 31-12-2009 were as follows:

Balance Sheet

Liabilities	1-1-2009 (₹)	31-12-2009 (₹)	Assets	1-1-2009 (₹)	31-12-2009 (₹)
Creditors	40,000	44,000	Cash	10,000	7,000
Mrs.Whites'Loan	25,000	-	Debtors	30,000	50,000
Loan from P.N.Bank	40,000	50,000	Stock	35,000	25,000
Captial	1,25,000	1,53,000	Machinery	80,000	55,000
			Land	40,000	50,000
			Building	35,000	60,000
	2,30,000	**2,47,000**		**2,30,000**	**2,47,000**

Additional Information:

(a) During the year machine costing ₹ 10,000 (accumulated depreciation ₹ 3,000) was sold for ₹ 5,000 .

(b) The provision for depreciation against machinery as on 1-1-2009 was ₹ 25,000 and on 31-12-2009 ₹ 40,000.

(c) Net profit for the year 2009 amounted to ₹ 45,000.

You are required to prepare funds flow statement.

3. Discuss the various methods of determining the fund from/lost (in) operations.

4. Explain the process of preparing the statement of changes in working capital.

5. Draft the pro forma of the Fund Flow Statement.

6. From the following balance sheets of A Ltd. on 31st Dec. 2008 and 2009, you are required to prepare Fund flow statement. The following are additional information has also been given

(a) Depreciation charged on plant was ₹ 4,000 and on building ₹ 4,000

(b) Provision for taxation of ₹ 19,000 was made during the year 2009.

(c) Interim Dividend of ₹ 8,000 was paid during the year 2009.

Balance Sheet

Liabilities	2008 (₹)	2009 (₹)	Assets	2008 (₹)	2009 (₹)
Share capital	1,00,000	1,00,000	Good will	12,000	12,000
General Reserve	14,000	18,000	Building	40,000	36,000
Profit & Loss A/c	16,000	13,000	Plant	37,000	36,000
Sundry creditors	8,000	5,400	Investments	10,000	11,000
Bills payable	1,200	800	Stock	30,000	23,400
Provision for taxation	16,000	18,000	Bill receivable	2,000	3,200
Provision for doubtful debts	400	600	Debtors	18,000	19,000
			Cash	6,600	15,200
	1,55,600	**1,55,800**		**1,55,600**	**1,55,800**

Notes

7. Prepare schedule of changes in Working Capital and Funds Flow Statement from the following Balance Sheets as on December 31, 2008.

Liabilities	2008 (₹)	2009 (₹)	Assets	2008 (₹)	2009 (₹)
Capital	10,000	10,000	Cash	5,600	5,400
Profit & Loss A/c	5,200	15,400	Debtors	3,400	6,600
Long-term Loan	6,000	8,000	Stock	5,400	9,200
Short-term Loan	2,400	2,400	Long-term Investments	7,000	12,000
Creditors	3,600	3,600	Plant	10,600	9,600
Outstanding Wages	1,400	800	Prepaid Insurance	400	800
Income Tax Provision	3,800	3,400			
	32,400	**43,600**		**32,400**	**43,600**

Plant was sold at its book value, i.e., ₹ 1,000/.

8. From the following Balance Sheets, prepare a Schedule of changes in Working Capital and Funds Flow Statement:

Liabilities	31.12.07 (₹)	31.12.08 (₹)	Assets	31.12.07 (₹)	31.12.08 (₹)
Capital	4,80,000	5,10,000	Cash at Bank	24,000	54,000
Profit & Loss a/c	8,50,000	10,50,000	Debtors	9,90,000	11,90,000
Creditors	54,000	30,000	Stock	54,000	42,000
Mortgage Loans	28,000	1,00,000	Land	2,00,000	2,00,000
			Plant	1,44,000	2,04,000
	14,12,000	**16,90,000**		**14,12,000**	**16,90,00**

9. The following is the abstract of balance sheet of Software securities Ltd. for the year 2005 and 2006

Liabilities	2005 (₹)	2006 (₹)	Assets	2005 (₹)	2006 (₹)
Provision for depreciation	108000	396000	Land	26000	81000
Retained earning	244800	370800	Building	60000	360000
9% Debenture	270000	198000	Accumulated depreciation on building	19800	37800
Account payable	72000	41400	Equipment	122400	347400
Expense payable	0	18000	Accumulated depreciation on Equipment	18000	50400
			Stock in hand	10800	97200
			Account receivable	36000	122400
			Cash in hand	66600	97200
			Preliminary expenses	10800	7200

Notes

The income statement of Software Securities Ltd. is as under

Sales	1602000
Less cost of sale	837000
Less operating exp.	397800
Less interest exp.	21600
Loss on sale of equipments	3600
	126000
Net income before tax	342000
Provision of tax	117000
Net Income after tax	225000

Additional information:

(a) Operating expenses include depreciation of ₹ 59400 and charges from preliminary expenses of ₹ 3600.

(b) Land was sold at its book value.

(c) Cash dividend paid for the year 2006 amounted to ₹ 27000 and fully paid bonus shares were given in the ratio of 2 shares for every 3 shares hel(d).

(d) Interest expenses was paid in cash.

(e) Equipment with a cost of ₹ 298800 was purchased for cash. Equipment with a cost of ₹ 73800 (book value ₹ 64800) was sold for ₹ 61200.

(f) Debenture for ₹ 18000 were redeemed for cash and for ₹ 54000 were redeemed by converting into equity shares at par value.

(g) Equity shares of ₹ 162000 were issued for cash at par.

(h) Income tax paid during the year amounted to ₹ 117000.

Prepare the fund flow statement with both the methods.

10. "Fund flow statements can be used to identify a variety of problems in the way a company operates." Illustrate the statement by the help of suitable examples.

Answers: Self Assessment

1.	(a)	2.	(a)
3.	(a)	4.	(c)
5.	(a)	6.	(a)
7.	(a)	8.	(b)
9.	(a)	10.	(b)
11.	(a)	12.	(a)
13.	(d)	14.	(d)
15.	(a)		

Notes

7.12 Further Readings

Books

B.M. Lall Nigam and I.C. Jain, *Cost Accounting*, Prentice-Hall of India (P) Ltd.

Hilton, Maher and Selto, *Cost Management*, 2nd Edition, Tata McGraw-Hill Publishing Company Ltd.

M.P. Pandikumar, *Management Accounting*, Excel Books.

M.N. Arora, *Cost and Management Accounting*, 8th Edition, Vikas Publishing House (P) Ltd.

Online links

www.authorstream.com

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Notes

Unit 8: Cash Flow Statement

CONTENTS

Objectives

Introduction

8.1 Meaning of Cash Flow Statement

8.2 Utility of Cash Flow Statement

8.3 Steps in the Preparation of Cash Flow Statement

8.4 Preparation of Cash Flow Statement

8.5 AS-3 Revised Cash Flow Statement

8.6 Summary

8.7 Keywords

8.8 Self Assessment

8.9 Review Questions

8.10 Further Readings

Objectives

After studying this unit, you will be able to:

- Know the utility of cash flow statement
- List of the steps in the preparation of cash flow statement
- Prepare preparation of cash flow statement
- Illustrate the AS-3 Revised cash flow statement

Introduction

Cash is considered one of the vital sources of the firm to meet day to day financial commitments. The cash is considered to be as most important source of life blood of the business. The day to day financial commitments are met out only out of the available resources. The cash resources are availed through two different types of receipts viz. sales, dividends, interests known as regular receipts and sale of assets, investments known as irregular receipts of the business enterprise. To have smooth flow of business enterprise, it should have ample cash resources for its operations. The availability of cash resources is mainly depending on the cash inflows of the enterprises. The smoothness in operations of the enterprise is obtained through an appropriate matching of cash inflows and cash outflows.

To have smoothness in the operations of the enterprise, the firm should have an appropriate volume of cash resources at speedier rate as well as more than the financial commitments of the firm. This smoothness could be attained by way of an appropriate planning analysis on the cash resources of the firm. The meaningful analysis is only possible through cash flow statement analysis which facilitates the firm to identify the possible sources of cash as well as the expenses and expenditures of the firm.

Notes

8.1 Meaning of Cash Flow Statement

The cash flow statement is being prepared on the basis of an extracted information of historical records of the enterprise. Cash flow statements can be prepared for a year, for six months, for quarterly and even for monthly. The cash includes not only means that cash in hand but also cash at bank.

The following are the main motives of preparing the cash flow statement:

1. To identify the causes for the cash balance changes in between two different time periods, with the help of corresponding two different balance sheets.
2. To enlist the factors of influence on the reduction of cash balance as well as to indicate the reasons though the profit is earned during the year and vice-versa.

8.2 Utility of Cash Flow Statement

1. To identify the reasons for the reduction or increase in the cash balances irrespective level of the profits earned by the firm.
2. It facilitates the management to maintain an appropriate level of cash resources.
3. It guides the management to take futuristic decisions on the prospective demands and supply of cash resources through projected cash flows.
   (a) How much cash resources are required?
   (b) How much cash requirements could be internally settled?
   (c) How much cash resources are to be raised through external sources?
   (d) Which types of instruments are going to be floated for raising the required resources?
4. It helps the management to understand its capacity at the moment of borrowing for any further capital budgeting decisions.
5. It paves way for scientific cash management for the firm through maintenance of an appropriate cash levels i.e. optimum level cash of resources.
6. It avoids in holding excessive or inadequate cash resources through proper planning of cash resources.
7. It moots control through identification of variations occurred in the cash expenses and expenditures.

Notes

Cash Flow Statement vs Fund Flow Statement

Cash Flow Statement	Fund Flow Statement
Cash inflow and outflow are only considered	Increase or decrease in the working capital is registered
Causes & changes of cash position	Causes & changes of working capital position
Considers only most liquid assets pertaining to cash resource; which fosters only for very short span of planning	Considers in general i.e. current assets; the duration of the liquidity of the current assets are longer in gestation than the liquid assets; which paves way for long span of planning

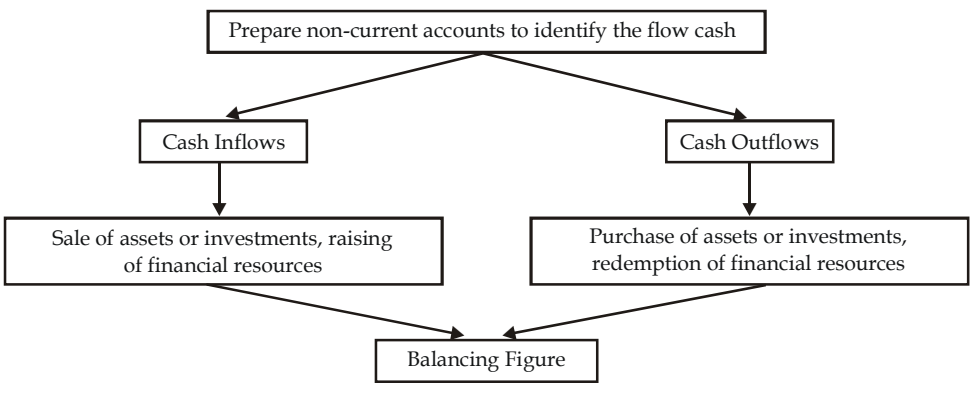
Contd...

Notes

Opening and closing balances of cash resources are considered for the preparation	Increase or decrease of working capital is considered but not the opening and closing balance for preparation
The flow in the statement means real cash flow	The flow in the statement need not be real cash flow

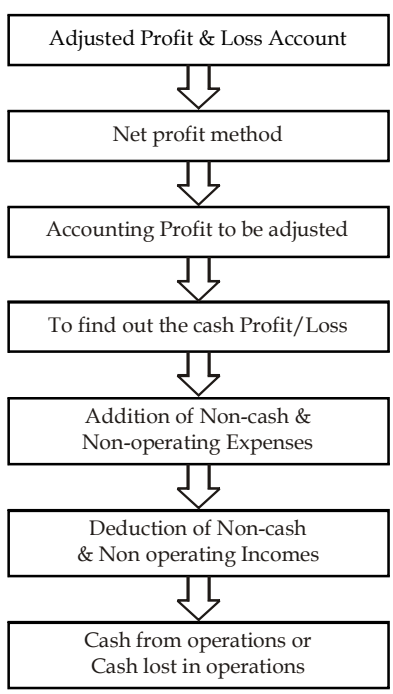
8.3 Steps in the Preparation of Cash Flow Statement

Figure 8.1



Preparation of Adjusted Profit & Loss Account

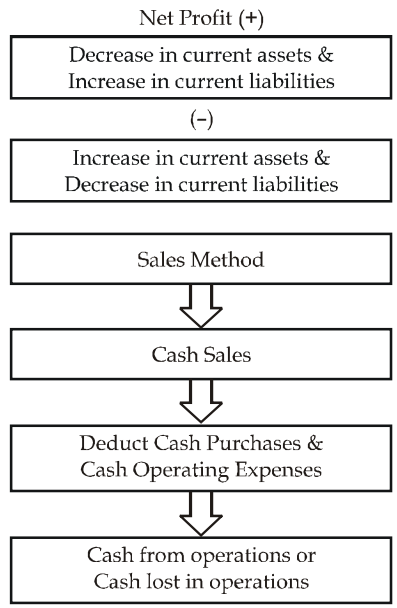
Figure 8.2



Notes

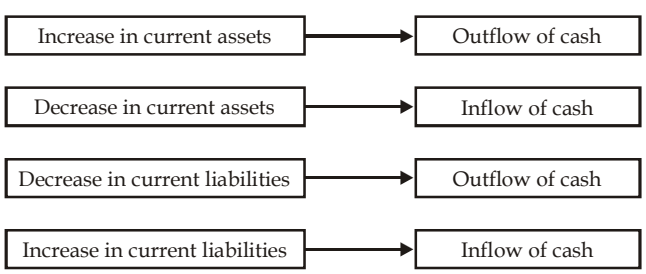
Alternate Method

Figure 8.3



Comparison of Current items to determine the Inflow of Cash or Outflow of Cash

Figure 8.4



8.4 Preparation of Cash Flow Statement

The cash flow statement can be prepared either in statement form or in accounting format.

Inflow cash	(₹)	Outflow cash	(₹)
Opening cash balance	XXXX	Redemption of preference shares	XXXX
Cash from in operations	XXXX	Redemption of debentures	XXXX
Sale of assets	XXXX	Repayment of loans	XXXX
Issue of shares	XXXX	Payment of dividends	XXXX
Issue of debentures	XXXX	Payment of tax	XXXX
Raising of loans	XXXX	Cash lost in operations	XXXX

Contd...

Notes

Collection from debentures	XXXX		
Refund of tax	XXXX		
	XXXX		**XXXX**

Example: From the following balances you are required to calculate cash from operations.

Particulars	December 31	
	2008 (₹)	2009 (₹)
Debtors	1,00,000	94,000
Bills receivable	20,000	25,000
Creditors	40,000	50,000
Bills payable	16,000	12,000
Outstanding expenses	2,000	2,400
Prepaid expenses	1,600	1,400
Accrued Income	1,200	1,500
Income received in advance	600	500
Profit made during the year	-	2,60,000

According to net profit method, the cash from operation has to be found out.

Cash from operations

= Net profit (+) [Decrease in current assets & Increase in current liabilities] (–) [Increase in current assets & Decrease in current liabilities]

The next step is to quantify the decrease in current assets and increase in current liabilities, in order to add with the closing net profit of the given statements and then the added volume should be deducted from the increase in current assets and decrease in current liabilities.

	₹	₹
Profit made during the year		2,60,000
Add:		
Decrease in debtors	6,000	
Increase in creditors	10,000	
Outstanding expenses	400	
Prepaid expenses	200	16,000
Less:		
Increase in Bills receivable	5,000	
Decrease in Bills payable	4,000	
Increase in accrued income	300	
Income received in advance	100	9,4000
Cash from operations		**2,67,200**

Notes

Example: From the following profit & loss account, you are required to compute cash from operations.

Profit and Loss Account
for the year ending 31st Dec, 2009

	₹		₹
To Salaries	10,000	By Gross profit	50,000
To Rent	2,000	By Profit on sale of land	10,000
To Depreciation	4,000	By Income tax refund	6,000
To Loss on sale of plant	2,000		
To Goodwill written off	8,000		
To Proposed dividend	10,000		
To provision for taxation	10,000		
To Net profit	20,000		
	66,000		**66,000**

	₹	₹
Net profit made during the year		20,000
Add:		
Non-cash expenses		
Depreciation	4,000	
Loss on sale of plant	2,000	
Goodwill return off	8,000	
Non-operating expenses		
Proposed dividend	10,000	
Provision for taxation	10,000	34,000
Less:		
Non cash income		
Profit on sale of land	10,000	
Non operating income		
Income tax refund	6,000	16,000
		38,000

Task

Illustrate the impact of the changes taken place on the current assets and current liabilities to the tune of cash flows determination of the firm.

8.5 AS-3 Revised Cash Flow Statement

Cash flow statement provides information about the cash receipts and payments of an enterprises for a given period. It provides important information that supplements the profit and loss account and balance sheet.

The statement of cash flows is required to be reported by Accounting Standard-3 (Revised) issued by the Institute of Chartered Accountants of India in March 1997 Which replaces the 'Changes in Financial Position' as per AS-3.

There are certain changes in the preparation of cashflow statement from the previous methods as a result of the introduction of AS-3 (Revised).

Notes

AS-3 (Revised) is mandatory in nature in respect of accounting periods commencing on or after 1-4-2001 for the following:

1. Enterprises whose equity or debt securities are listed on a recognised stock exchange in India, and enterprises that are in the process of issuing equity or debt securities that will be listed on a recognised stock exchange in India as evidenced by the board of directors' resolution in this regard.

2. All other commercial, industrial and business reporting enterprises, whose turnover for the accounting period exceeds ₹ 50 crores.

Cash flow Statement (Indirect Method) (Accounting Standard-3 (Revised)		(₹)
Cash flow from Operating activities		
Net profit before tax and extraordinary items		xxx
Adjustments for:		
-Depreciation		xxx
-Foreign exchange		xxx
-Investments		xxx
-Gain or loss on sale of fixed assets		(xxx)
-Interest/dividend		xxx
Operating Profit Before Working Capital Changes		xxx
Adjustment for:		
-Trade and other receivables		xxx
-Inventories		(xxx)
-Trade payables		xxx
Cash Generated from Operations		xxx
-Interest paid		(xxx)
-Direct taxes		(xxx)
Cash before Extraordinary Items		xxx
Deferred revenue		xxx
Net cashflow from operating activities	(a)	xxx
Cashflow from Investing activities		
Purchase of fixed assets		(xxx)
Sale of fixed assets		xxx
Sale of investments		xxx
Purchase of investments		(xxx)
Interest received		xxx
Dividend received		xxx
Loans to subsidiaries		xxx
Net cashflow from investing activities	(b)	xxx
Cashflow from Financing Activities		
Proceeds from issue of share capital		xxx
Proceeds from long term borrowings		xxx
Repayment to finance/lease liabilities		(xxx)
Dividend paid		(xxx)
Net cashflow from financing activities	(c)	xxx
Net Increase (decrease) in cash and cash equivalents during the period	(a+b+c)	xxx
Cash and cash equivalents at the beginning of the year		xxx
Cash and cash equivalents at the end of the year		xxx

Notes

Example: From the following profit and loss account, you are required to compute cash from operations.

Profit and loss account for the year ending 31st Dec, 1983

	₹		₹
To Salaries	10,000	By Gross profit	50,000
To Rent	2,000	By Profit on sale of land	10,000
To Depreciation	4,000	By Income tax refund	6,000
To Loss on sale of plant	2,000		
To Goodwill written off	8,000		
To Proposed dividend	10,000		
To Provision for taxation	10,000		
To Net profit	20,000		
	66,000		66,000

If profit & loss account is given, the net profit should be adjusted to derive the cash from either operations or lost in operations.

To adjust the net profit, the non-operating expenses and non-cash expenses are to be added and the non-operating income and non-cash incomes are to deducted.

The purpose of adding non-cash expenses and non-operating expenses is to nullify the process of deduction which already took place during the moment of finding out the profits.

Cash from operations	₹	₹
Net profit made during the year		20,000
Add:		
Non-cash expenses		
Depreciation	4,000	
Loss on sale of plant	2,000	
Goodwill written off	8,000	
Non-operating expenses		
Proposed dividend	10,000	
Provision for taxation	10,000	34,000
Less		
Non-Operating/cash income		
Profit on sale of land	10,000	
Income tax refund	6,000	16,000
		38,000

Example: The comparative balance sheets of M/s Ram Brothers for the two years were as follows:

Liabilities	Mar,31		Assets	Mar,31	
	1984	1985		1984	1985
Capital	3,00,000	3,50,000	Land &Building	2,20,000	3,00,000
Loan from Bank	3,20,000	2,00,000	Machinery	4,00,000	2,80,000
Creditors	1,80,000	2,00,000	Stock	1,00,000	90.000
Bills payable	1,00,000	80,000	Debtors	1,40,000	1,60,000
Loan from SBI		50,000	Cash	40,000	50,000
	9,00,000	8,80,000		9,00,000	8,80,000

Notes

Additional information

(i) Net profit for the year 1985 amounted ₹ 1,20,000.

(ii) During the year a machine costing ₹ 50,000 (accumulated depreciation ₹ 20,000) was sold for ₹ 26,000. The provision for depreciation against machinery as on 31st March, 1984 was ₹1,00,000 and on 31st March, 1985 ₹1,70,000.

You are required to prepare a cash flow statement.

The first step is to prepare non-current accounts.

Non-current account includes both non-current liability and asset.

First, start with non-current liability.

The net profit is normally added with the capital of the owners contribution. As a whole it is known as shareholders' fund or net worth of the firm. Whenever the firm earns profit, the net profit should be added with the initial capital contributed by the owner.

The entry is as follows:

		₹	₹
P& L Appropriation A/c	Dr	1,20,000	
To Mr X Capital Ac			1,20,000

Dr **Capital A/c** **Cr**

	₹		₹
To Drawings. Balancing Fig.	70,000	By Balance B/d (Opening)	3,00,000
To Balance c/d (Closing)	3,50,000	By Net profit	1,20,000
	4,20,000		4,20,000

Total capital should be shown at the end of the year 1985 as ₹ 4,20,000, but it was amounting to ₹ 3,50,000 shown as a closing balance. It clearly understood that ₹ 70,000 worth of profit was taken away by the owner for his personal needs; known as drawings.

The next step is to find out the depreciation provided during the year, which affects non-current asset account of the firm i.e. Machinery account.

Before discussing the accounting transactions, the journal entry for provision for depreciation should be known.

		₹	₹
Provision for depreciation A/c	Dr	20,000	
To sold Machinery Depreciation A/c			20,000

Dr. **Provision for Depreciation Account** **Cr.**

	₹		₹
To sold Machinery Depreciation	20,000	By Balance B/d	1,00,000
To Balance C/d	1,70,000	By (Adjusted profit and loss account) Depreciation provided during the year	90,000
	1,90,000		1,90,000

Notes

Cash sale of the machinery amounted to ₹ 26,000.

What happens during the cash sale of a machinery ?

Debit what comes in - Cash resources are coming in.

Credit what goes out- Machinery is going out of the firm.

		₹	₹
Cash A/c	Dr	26,000	
To Machinery A/c			26,000

While selling the machinery, it is most important to identify the worth of the sale transaction of the machinery.

	₹
Original cost of the asset	50,000
Accumulated Depreciation	20,000
	30,000
Sale price	26,000
Loss on sale of the assets	4,000

Once the loss of the transaction is found out, the amount of the loss should be appropriately recorded.

Debit all losses.

Credit the asset account.

		₹	₹
Loss of Machinery sale A/c	Dr.	4,000	
To Machinery A/c			4,000

Dr. **Machinery Account** **Cr.**

	₹		₹
To Balance B/d (Opening)	5,00,000	By cash sale	26,000
		By Profit and loss a/c Loss Balancing Fig.	4,000
		By Depreciation Provision	20,000
		By Balance c/d(Closing) 2,80,000+1,70,000	4,50,000
	5,00,000		5,00,000

During the purchase of land and building, what happens?

Debit what comes in - land and building are coming in.

Credit what goes out - cash resources are going out.

		₹	₹
Land & Building A/c	Dr	80,000	
To Cash A/c			80,000

Notes

Dr. **Land and Building** **Cr.**

	₹		₹
To Balance B/d (Opening)	2,20,000		
To Cash (Purchase)	80,000	By Balance c/d (Closing)	3,00,000
	3,00,000		3,00,000

The next step is to prepare adjusted profit and loss account.

Dr. **Adjusted profit and loss account** **Cr.**

	₹		₹
To Machinery A/c (Loss on sale)	4,000	By Balance B/d	----------
To Depreciation provided during the year	90,000	By Cash from operations	2,14,000
To Balance c/d	1,20,000		
	2,14,000		2,14,000

The next most important step is to compare the current assets.

Increase in creditors	-₹ 20,000	- cash inflow
Loan from SBI	-₹ 50,000	- cash inflow
Decrease in stock	-₹ 10,000	- cash inflow
Loan repaid	-₹ 1,20,000	- cash outflow
Decrease in bills payable	-₹ 20,000	- cash outflow
Increase in Debtors	-₹ 20,000	-cash outflow

Cash flow statement

Inflow	₹	Outflow	₹
Opening cash balance	40,000	Loan repaid	1,20,000
Creditors	20,000	Bills payable	20,000
Loan from SBI	50,000	Debtors	20,000
Stock	10,000	Land and buildings purchased	80,000
Machinery cash sale	26,000	Drawings	70,000
Cash from operations	2,14,000	Closing cash balance	50,000
	3,60,000		3,60,000

Example: Data Ltd. supplies you the following balance on 31 st Mar. 1995 and 1996.

Liabilities	1995	1996	Assets	1995	1996
Share capital	1,40,000	1,48,000	Bank balance	18,000	15,600
Bonds	24,000	12,000	Accounts Receivable	29,800	35,400
Accounts payable	20,720	23,680	Inventories	98,400	85,400
Provision for debts	1,400	1,600	Land	40,000	60,000
Reserves and Surpluses	20,080	21,120	Goodwill	20,000	10,000
	2,06,200	2,06,400		2,06,200	2,06,400

Notes

Additional information:

(i) Dividends amounting to ₹ 7,000 were paid during the year 1996.

(ii) Land was purchased for ₹20,000.

(iii) ₹10,000 were written off on goodwill during the year.

(iv) Bonds of ₹12,000 were paid during the course of the year.

(v) You are required to prepare a cash flow statement.

The first step is to prepare non-current accounts.

The first step is to prepare non-current assets and liabilities account.

As far as non-current asset account is concerned, Land account has to be prepared.

The opening balance is lesser than the closing balance of the Land account of the firm.

It is only due to purchase of land only inflated the value of the land at the end of the time horizon.

Debit what comes in - Land has come in.

Credit what goes out- cash resources have gone out of the firm at the moment of purchase.

		₹	₹
Land A/c	Dr	20,000	
To cash A/c			20,000

Dr. Land Cr.

	₹		₹
To Balance B/d (Opening)	40,000		
To Cash (Purchase)	20,000	By Balance c/d (Closing)	60,000
	60,000		60,000

The non-current liability account is to be prepared.

The first non-current liability account that is affected is the share capital account.

The opening balance of share capital is less than the closing balance of the share capital account. It means that the firm has undergone for further issue of share capital. The further issue of share capital brings forth cash inflows to the firm.

		₹	₹
Cash A/c	Dr	8,000	
To share capital A/c			8,000

Dr. Share capital account Cr.

	₹		₹
		By Balance B/d (Opening)	1,40,000
To Balance c/d (Closing)	1,48,000	By Cash Balancing figure	8,000
	1,48,000		

The next non-current liability account is the Bonds account.

Notes

During the repayment of bonds or redemption of bonds, the cash resources are going out of the firm.

		₹	₹
Bond A/c	Dr	12,000	
To Cash (redemption)			12,000

Dr. Bond account Cr.

	₹		₹
To cash (redemption)	12,000	By Balance B/d (Opening)	24,000
To Balance c/d (Closing)	12,000		
	24,000		24,000

The next step is to prepare the Adjusted Profit & Loss account

Dr. Adjusted Profit & Loss account Cr.

To Provision for doubtful debts	200	By Balance B/d	20,080
To Goodwill written off	10,000	By Cash from operations	18,240
To Dividends paid	7000		
To Balance c/d	21,120		
	38,320		38,320

The next most important step is to compare the current assets during the two years.

Increase in Accounts payable	- ₹2,960	- Cash inflow
Decrease in Inventories	-₹13,000	- Cash inflow
Increase in accounts receivable	-₹5,600	- Cash outflow

The next step is to draft the Cash flow statement.

Cash flow statement

Inflow	₹	**Outflow**	₹
Opening cash balance	18,000	Increase in bills receivable	5,600
Issue of shares	8,000	Purchases of land	20,000
Increase in Bills payable	2,960	Dividends paid	7,000
Decrease in stock	13,000	Bonds repaid	12,000
Cash from operations	18,240	Closing cash balance	15,600
	60,200		60,200

Notes

8.6 Summary

- Cash flow statement indicates sources of cash inflows and transactions of cash outflows prepared for a period.
- It is an important tool of financial analysis and is mandatory for all the listed companies.
- The cash flow statement indicates inflow and outflow in terms of three components: (1) Operating, (2) Financing, and (3) Investment activities.
- Cash inflows include sale of assets or investments, and raising of financial resources.
- Cash outflows include purchase lo assets or investments and redemption of financial resources.

8.7 Keywords

Adjusted Profit & Loss A/c: Statement devised to determine the cash from operations.

Cash from Operations: Cash resources accrued in the business operations.

8.8 Self Assessment

Choose the appropriate answer:

1. Cash flow means
   - (a) Change in cash position
   - (b) Change in working capital position
   - (c) Change in current assets position
   - (d) Change in current liabilities position

2 Adjusted profit & loss account is to determine
   - (a) Cash from operations
   - (b) Cash lost in operations
   - (c) Cash from operations or cash lost in operations
   - (d) None of the above.

3. Comparison in between the current assets and current liabilities to determine
   - (a) Cash inflow
   - (b) Cash outflow
   - (c) Both (a) & (b)
   - (d) None of the above.

4. Non-current accounts are prepared for the cash inflows and cash outflows on the basis of following relationship
   - (a) Non-current asset account and cash
   - (b) Non-current liability account and cash
   - (c) Both (a) & (b) only
   - (d) None of the above.

Notes

5. Cash flow statement analysis is an analysis of short span of analysis due to
   (a) Current assets position is only considered
   (b) Super quick assets position only considered
   (c) Working capital position is considered
   (d) None of the above.
6. How cash flows are denominated in terms of both current assets and current liabilities?
   (a) Increase in current assets and Decrease in current liabilities
   (b) Decrease in current assets and Increase in current liabilities
   (c) Increase in current assets and Increase in current liabilities
   (d) Both (a) & (b).
7. Cash position at the opening and closing comprises of
   (a) Cash in hand
   (b) Cash at bank
   (c) Both cash in hand and at bank
   (d) None of the above.
8. Cash flow analysis superior than the fund flow analysis due to
   (a) Shorter span of cash resources are considered
   (b) Real cash flows only taken into consideration
   (c) Opening and closing cash balances are only considered
   (d) (a), (b) & (c).
9. Sale of the plant and machinery falls under the category of
   (a) Non-current asset sale – cash in flow
   (b) Current asset sale – cash out flow
   (c) Non-current asset sale – cash out flow
   (d) None of the above.
10. Which of the following cannot be included in financing cash flows?
    (a) Payments of dividends
    (b) Repayment of debt principal
    (c) Sale or repurchase of the company's stock
    (d) Proceeds from issuing shares.
11. Which of the following cannot be included in cash outflows?
    (a) Operating and capital outlays
    (b) Family living expenses
    (c) Loan payments
    (d) None of these.

Notes

12. Which of the following is not a part to the Statement of Cash Flows (or Cash Flow Statement)?
    (a) Operating Activities
    (b) Investors' Activities
    (c) Financing Activities
    (d) Supplemental Activities.
13. Which of the following is not included under operating activities?
    (a) Receipts from income
    (b) Payment for a new investment
    (c) Payment for expenses and employees
    (d) Funding of debtors.
14. Which of the following is included under cash outflows?
    (a) Buying new assets
    (b) Money the business borrows
    (c) Proceeds from selling an investment
    (d) None of these.
15. Which of the following is not judged about by the cash flow statements?
    (a) Profitability
    (b) Financial condition
    (c) Financial management
    (d) Movement of fund

8.9 Review Questions

1. The comparative Balance Sheets of M/s Ram Brothers for the two years were as follows:

Liabilities	Mar, 31		Assets	Mar, 31	
	2008	2009		2008	2009
Capital	3,00,000	3,50,000	Land &Building	2,20,000	3,00,000
Loan from Bank	3,20,000	2,00,000	Machinery	4,00,000	2,80,000
Creditors	1,80,000	2,00,000	Stock	1,00,000	90.000
Bills payable	1,00,000	80,000	Debtors	1,40,000	1,60,000
Loan from SBI		50,000	Cash	40,000	50,000
	9,00,000	**8,80,000**		**9,00,000**	**8,80,000**

Additional Information:

(a) Net profit for the year 2009 amounted to ₹ 1,20,000.

(b) During the year a machine costing ₹ 50,000 (accumulated depreciation ₹ 20,000) was sold for ₹ 26,000. The provision for depreciation against machinery as on 31 Mar., 2008 was ₹ 1,00,000 and 31st Mar., 2009 ₹ 1,70,000.

You are required to prepare a cash flow statement.

Notes

2. Draw the proforma of the Adjusted profit and loss account.

3. Data Ltd., supplies you the following balance on 31st Mar 2008 and 2009.

Liabilities	2008	2009	Assets	2008	2009
Share capital	1,40,000	1,48,000	Bank balance	18,000	15,600
Bonds	24,000	12,000	Accounts Receivable	29,800	35,400
Accounts payable	20,720	23,680	Inventories	98,400	85,400
Provision for debts	1,400	1,600	Land	40,000	60,000
Reserves and Surpluses	20,080	21,120	Good will	20,000	10,000
	2,06,200	**2,06,400**		**2,06,200**	**2,06,400**

Additional information:

(a) Dividends amounting to ₹ 7,000 were paid during the year 2009.

(b) Land was purchased for ₹ 20,000.

(c) ₹ 10,000 were written off on good will during the year.

(d) Bonds of ₹ 12,000 were paid during the course of the year.

You are required to prepare a cash flow statement.

4. Since everything has some utility, analyse the cash flow statement analysis and explain its various utilities.

5. Discuss the procedure of determining cash provided by operating activities. Give suitable example to illustrate your answer.

6. The following is the abstract of balance sheet of Software securities ltd for the year 2005 and 2006.

Liabilities	2005 (₹)	2006 (₹)	Assets	2005 (₹)	2006 (₹)
Provision for depreciation	108000	396000	Land	26000	81000
Retained earning	244800	370800	Building	60000	360000
9% Debenture	270000	198000	Accumulated depreciation on building	19800	37800
Account payable	72000	41400	Equipment	122400	347400
Expense payable	0	18000	Accumulated depreciation on Equipment	18000	50400
			Stock in hand	10800	97200
			Account receivable	36000	122400
			Cash in hand	66600	97200
			Preliminary expenses	10800	7200

The income statement of Software Securities Ltd. is as under

Sales	1602000
Less cost of sale	837000
Less operating exp.	397800
Less interest exp.	21600
Loss on sale of equipments	3600
	126000

Notes

Net income before tax	342000
Provision of tax	117000
Net Income after tax	225000

Additional information:

(a) Operating expenses include depreciation of ₹ 59400 and charges from preliminary expenses of ₹ 3600.

(b) Land was sold at its book value.

(c) Cash dividend paid for the year 2006 amounted to ₹ 27000 and fully paid bonus shares were given in the ratio of 2 shares for every 3 shares held.

(d) Interest expenses was paid in cash.

(e) Equipment with a cost of ₹ 298800 was purchased for cash .Equipment with a cost of ₹ 73800 (book value ₹ 64800) was sold for ₹ 61200.

(f) Debenture for ₹ 18000 were redeemed for cash and for ₹ 54000 were redeemed by converting into equity shares at par value.

(g) Equity shares of ₹ 162000 were issued for cash at par.

(h) Income tax paid during the year amounted to ₹ 117000.

Prepare the cash flow statement with both the methods.

7. Determine which of the following are added back to [or subtracted from, as appropriate] the net income figure (which is found on the Income Statement) to arrive at cash flows from operations.

   (a) Depreciation

   (b) Deferred tax

   (c) Amortization

   (d) Any gains or losses associated with the sale of a non-current asset.

   Support your answers with elaborative reasoning.

8. Assume that you are thinking of purchasing a new machine that will allow you to offer a new product to your customers. The machine will cost ₹ 100,000 to purchase and install, and after five years (when you plan to sell it) the machine will be worth about ₹ 10,000. Your facility has plenty of room, so you won't have any additional rental costs for space, and you can piggyback advertising for the new product on to your existing advertising budget. You will, however, have to pay for insurance, personal property taxes, and a part-time employee to operate the machinery (these items are included in your fixed costs which will total ₹ 12,000 in the first year). Also, there will be costs for materials, supplies, and electricity that will vary depending on the volume of production. These variable costs will amount to about 60 percent of the sales revenues. Develop a projected cash flow statement for the project.

9. Think of the possible errors that might be committed while developing the cash flow statements and suggest ways to prevent such mistakes beforehand.

10. Show by example how to prepare a cash flow statement using a balance sheet.

11. Unlike the balance sheet and the income statement, the cash flow statement is not based on accruals accounting, why?

Notes

12. For each of the following items, indicate which part (out of Operating, Investing, Financing and Supplemental) will be affected and why.
    (a) Depreciation Expense
    (b) Proceeds from the sale of equipment used in the business.
    (c) The Loss on the Sale of Equipment
    (d) Declaration and payment of dividends on company's stock
    (e) Gain on the Sale of Automobile formerly used in the business.

Answers: Self Assessment

1.	(a)	2.	(c)
3.	(c)	4.	(c)
5.	(d)	6.	(d)
7.	(c)	8.	(b)
9.	(a)	10.	(c)
11.	(d)	12.	(b)
13.	(b)	14.	(a)
15.	(d)		

8.10 Further Readings

Books

B.M. Lall Nigam and I.C. Jain, *Cost Accounting*, Prentice-Hall of India (P) Ltd.

Hilton, Maher and Selto, *Cost Management*, 2nd Edition, Tata McGraw-Hill Publishing Company Ltd.

M. P. Pandikumar, *Management Accounting*, Excel Books.

M. N. Arora, *Cost and Management Accounting*, 8th Edition, Vikas Publishing House (P) Ltd.

Online links

www.allinterview.com

www.authorstream.com

Notes

Unit 9: Budgetary Control

CONTENTS

Objectives

Introduction

9.1 Meaning of Budgetary Control

9.2 Limitations of Budgetary Control

9.3 Installation of Budgetary Control

9.4 Classification of Budgets

9.4.1 Classification on the Basis of Functions

9.4.2 Materials/Purchase Budget

9.4.3 Classification of the Budget in accordance with the Flexibility

9.5 Innovative Budgeting Techniques

9.5.1 Programme Budgeting

9.5.2 Performance Budgeting

9.5.3 Responsibility Accounting

9.5.4 Zero Based Budgeting

9.6 Summary

9.7 Keywords

9.8 Self Assessment

9.9 Review Questions

9.10 Further Readings

Objectives

After studying this unit, you will be able to:

- Explain the meaning of budgets and budgetary control
- State the limitations of budgetary control
- Discuss installation and classification of budgets
- Describe the innovative budgeting techniques like programme budgeting, performance budgeting, responsibility accounting and zero based budgeting.

Introduction

Budget is an estimate prepared for definite future period either in terms of financial or non-financial terms. Budget is prepared for any course of action or business or state or nation, as a whole. The budget is usually expressed in terms of total volume.

Notes

According to ICMA, England, a budget is as follows "a financial and or quantitative statement prepared and approved prior to a defined period of time, of the policy to be pursed during the period for the purpose of attaining a given objective."

It is in other words as "detailed plan of action of the business for a definite period of time." It is a statement of financial affairs/quantitative terms of an activity for a defined period, to achieve the enlisted objectives.

Budgeting is the course involved in the preparation of budget of an activity.

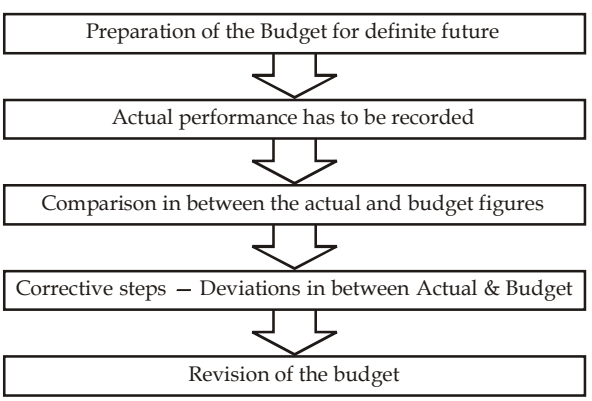
9.1 Meaning of Budgetary Control

Budgetary control contains two different processes one is the preparation of the budget and another one is the control of the prepared budget.

According to J. Batty, "Budgetary control is a system which uses budgets as a means of planning and controlling all aspects of producing and/or selling commodities and services."

According to ICMA, England, a budgetary control is, "the establishment of budgets relating to the responsibilities of executives to the requirements of a policy and the continuous comparison of actual with budgeted results, either to secure by individual action the objectives of that policy or to provide a basis for its revision".

Figure 9.1



9.2 Limitations of Budgetary Control

The limitations stated below are merely point to the need of maintaining the budgetary control system on a realistic and dynamic basis, rather than as a routine.

1. The preparation of a budget under inflationary conditions and changing government policies is really difficult. Thus, the accurate position of the business cannot be estimated.
2. Accuracy in budgeting comes through experience. Hence, it should not be relied on too much in the initial stages.
3. Budget is only a management tool. It is not a substitute for management in decision-making.
4. Budgetary control begins with the formulation of budgets, which are mere estimates. Therefore, the adequacy or otherwise of budgetary control system, to a very large extent, depends upon the adequacy or accuracy with which estimates are made.

Notes

5. Budgets are meant to deal with business conditions which are constantly changing. Therefore, budgets estimates lose much of their usefulness under changing conditions because of their rigidity. It is necessary that budgetary control system should be kept adequately flexible.
6. The system of budgetary control is based on quantitative data and represents only an impersonal appraisal to the conduct of business activity, unless it is supported by proper management of personal administration.
7. It has often been found that in practice, the organisation of budgetary control system become too heavy and, therefore, costly specially from the point of view of small concern.
8. Budgets and budgetary control have given rise to a very unhealthy tendency to be regarded as the solvent of all business problems. This has resulted in a very lukeworm human effort to deal with such problems and ultimately results in failure of budgetary control system.
9. It is a part of human nature that all controls are resented. Budgetary control, which places restrictions on the authority of the executive, is also resented by the employees.
10. Budgeting involves heavy expenditure, which small concerns cannot afford.
11. There will be active and passive resistance to budgetary control as it points out the efficiency or inefficiency of individuals.
12. The success of budgetary control depends upon willing co-operation and teamwork. This is often lacking.

9.3 Installation of Budgetary Control

The following steps should be considered in detail for sound budgets and for successful implementation of the budgetary control system:

1. ***Forecast:*** Forecast is a statement that contains the facts which are likely to happen at a future date. These facts may not occur as per the estimate. There will be an element of variation. It is only a statement of probable events. Forecast acts as a basis for the formulation of budgets. The degree of accuracy of forecasts is judged only after comparing it with the actual performance.
2. ***Organisation Chart:*** There should be a well defined organisation chart for budgetary control. This will show the authority and responsibility of each executive.

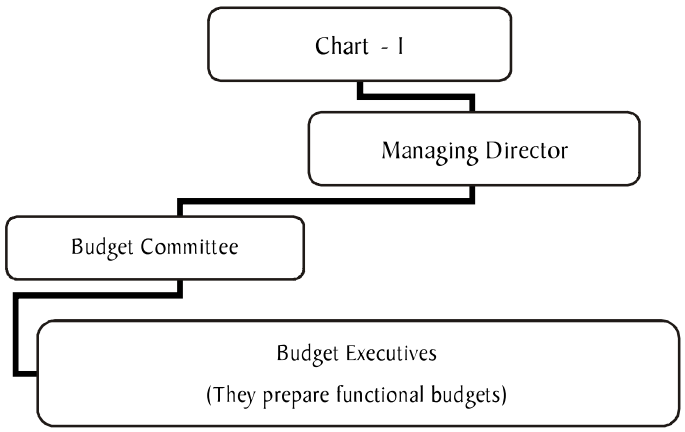
   Functional responsibility of a particular executive:

   (i) Delegation of authority to various levels.

   (ii) Relative position of a functional head with heads of other functions.
3. ***Budget Chart:*** Budget Chart is a structural chart showing the flow of authority and power. It identifies levels in the management hierarchy, shows authority and power enjoyed by each level and the responsibility to be discharged. The volume and nature of the business determines the structure of the chart. This chart helps in preparing the master budget, functional and sub-functional budgets. The following "Budget Charts" tell us as to who will prepare what budget.

Notes

Figure 9.2



Budget Executives	Budgets Prepared
1. Sales Director	(i) Sales budget
	(ii) Advertising budget
	(iii) Distribution cost budget
2. Product Director	(i) Production budget
	(ii) Repairs and maintenance of plant budget
3. Purchase Director	(i) Purchase budget
	(ii) Materials budget
4. Personnel Director	(i) Labour budget
5. Development Director	(i) Development cost budget
	(ii) Research budget
6. Finance Director	(i) Cost budget
	(ii) Cash budget
	(iii) Master budget

Notes The finance director actually integrates all functional budgets and estimates the requirement of working capital.

4. ***Budget Centre:*** A budget centre is a section of the organisation of the undertaking defined for the purpose of budget control. Budget centre should be established for cost control and all the budgets should be related to cost centres. Budget centres will disclose the sections of the organisation where planned performance is not achieved. Budget centre must be separately delimited because a separate budget has to be set with the help of the head of the department concerned. To illustrate, production manager has to be consulted for the preparation of production budget and finance manager for cash budget.

5. ***Budget Committee:*** In small companies, the budget is prepared by the cost accountant. But in big companies, the budget is prepared by the committee. The budget committee consists of the chief executive or managing director, budget officers and the managers of various departments. The managers of various departments prepare their budgets and submit them to this committee. The committee will make necessary adjustments, co-ordinate all the budgets and prepare a master budget.

Notes

6. ***Budget Manual:*** Budget Manual is a book that contains the procedure to be followed by the executives concerned with the budget. It guides the executives in preparing various budgets. It is the responsibility of the budget officer to prepare and maintain this manual.

> *Notes* The Budget Manual may contain the following particulars:
>
> 1. A brief explanation of the objectives and principles of budgetary control.
> 2. Duties and powers of the budget officer.
> 3. Functions and duties of the budget committee.
> 4. Budget period.
> 5. Accounts classification.
> 6. Reports, statements, forms and charts to be used.
> 7. Procedure to be followed for obtaining approval.
> 8. The finalisation of the functional budgets and their compilation into the master budget.
> 9. The form in which the various reports are to be made out, their periodicity and dates, the persons to whom these and their copies are to be sent.
> 10. The reporting of the remedial action.
> 11. The manner in which budgets, after acceptance and issuance, are to be revised or amended; and
> 12. The matters, included in budgets, on which action may be taken only with the approval of top management.

The main idea behind the budget manual is to inform line executives beforehand about procedures to be followed rather than issuing frequent instructions from the controller's office regarding procedures and forms to be used. Such frequent instructions can be a source of friction between the line and staff management.

7. ***Budget Period:*** A budget period is the length of time for which a budget is prepared and employed. It may be different in the same industry or business. The budget period depends upon the following factors:

   (a) The type of budget - whether it is a sales budget, production budget, raw material purchase budget, or capital expenditure budget. A capital budget may be for a longer period, i.e., three to 5 years; purchase and sales budget may be for one year.

   (b) The nature of the demand for the product.

   (c) The timing for the availability of finance.

   (d) The length of the trade cycle.

   All the above factors are taken into account while fixing the budget period.

8. ***Key Factor:*** It is also known as limiting factor or governing factor or principal budget factor. A key factor is one which restricts the volume of production. It may arise due to the shortage of material, labour, capital, plant capacity or sales. It is a factor that affects all other budgets. Therefore, the budget relating to the key factor is prepared before other budgets are framed.

9. ***Budget Reports:*** Performance evaluation and reporting of variances is an integral part of all control systems. Establishing budgets in itself is of no use unless a comparison is made

Notes

regularly between the actual expenditure and the budgeted allowances, and the results reported to the management. For this purpose, budget reports showing the comparison between the actual and budgeted expenditure should be presented periodically and promptly. The reports should be prepared in such a manner that they reveal the responsibility of a department or an executive and give full reasons for the variances so that proper corrective action may be taken. The variations from budgets are worked out in respect of each items of expenses so as to locate the responsibility and facilitate corrective action.

A specimen budget report for expenses is given below:

BUDGET REPORT

Department ..... **Period** .....

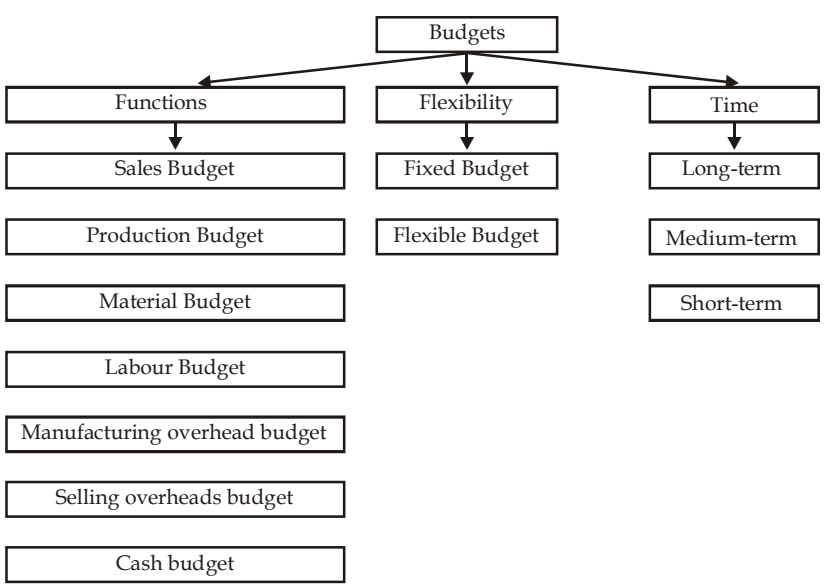
Expense	Budgeted ₹	Actual ₹	Differences Increase ₹	Decrease ₹	Cumulative variance ₹	Reasons
A.	Controllable Repairs Mach. Maintenance Elect. Maintenance Power Lighting Lubrication, etc.					
B.	Non-controllable Expense Floor space General Prorated Total					

Date of preparation ……..	Copies to:
Prepared by ……..	1 ……..
Checked by ……..	2 ……..
Submitted by ……..	3 ……..

9.4 Classification of Budgets

The following figure explains the classification of budget:

Figure 9.3



Notes

9.4.1 Classification on the Basis of Functions

On functional basis, the budgets can be classified into following categories:

1. ***Production Budget***

   The preparation of the production budget is mainly dependent on the sales budget. The production budget is a statement of goods, how much should be produced. It may be in terms of quantities, Kilograms in monetary terms and so on.

Did u know? **What is the purpose of the production budget?**

The ultimate aim of the production budget is to find out the volume of production to be made during the year based on the sale volume. The production and sales volume should go hand-in-hand with each other, otherwise the firm would require to face the acute problem on holding unnecessary excessive stock or inadequate stock to meet the needs of the buyers in time; which will disrepute in the supply of goods in time to them as already agreed upon.

Units to be produced = Budgeted Sales + Closing Stock – Opening Stock

The methodology of production budget includes three different components, *viz.* sales, closing stock and opening stock. Sales has to be added with the stock of the year at the end and to be deducted the opening stock.

Why sales has to be given paramount importance in the preparation of production budget?

The major sales of the business enterprise is being regularly made out of only through the current year production.

Why the closing stock has to be added?

The purpose of the closing stock to be added is that it is a stock at end of the year-end out of the current year production.

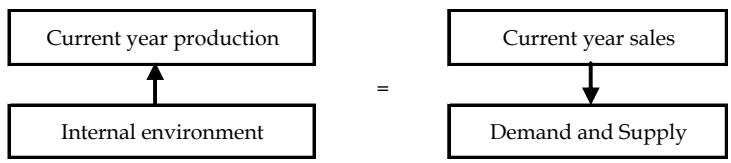
Why the opening stock has to be deducted?

The aim of deducting the opening stock is that the stock at the beginning is the stock out of the yester or previous year production.

If sales is normally equivalent to the entire year of production, the firm need not to concentrate on the volume of opening stock and closing stock. It means that, what ever produced during the year is equivalent to current year sales. If the entire production is sold out, there won't be closing stock at the end of the year and opening stock i.e. subsequent years.

If Current year production is equivalent to current year sales

Figure 9.4



Resultant: No closing stock and opening stock for the subsequent years. This situation may not be possible at always.

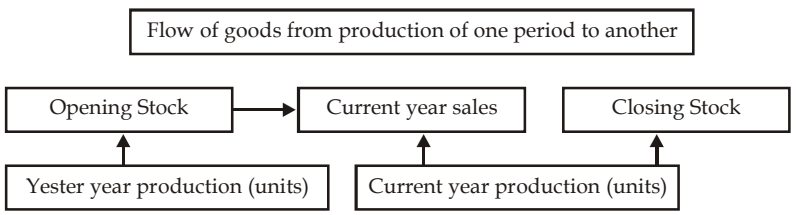
Notes

Why it is not possible at always?

The production volume is connected to the internal environment of the firm, which can be maintained through a systematic approach, but the sales cannot be easily administered by the firm which is being highly influenced by the demand and supply factors of the goods.

If the current year production is not equivalent to the current year sales

Figure 9.5



Why the closing stock arises in the business?

The closing stock is stock due to the excessive production over the sales volume. The reasons for excessive production are as follows:

1. Ineffective study of market potential through market research leads to the expression of excessive demand from the market, which signals the production department to produce to the tune of MR conducted.
2. Due to price fluctuations in the market may affect the volume of sales.
3. Due to meet the future demand.
4. The excessive production due to the cheaper availability of raw materials, which leads to greater amount of closing stock. If the storage cost is more than the hike takes place on the cost of raw materials leads to abnormal storage of the stock.

The above diagram clearly illustrates that the emergence of the opening stock and closing stock during the year out of sales and production volume of the enterprise.

Example: Prepare a production budget for three months ending March 31, 2008 for a factory manufacturing four different articles on the basis of the following information:

Type of the Product	Estimated Stock on Jan 1, 2008 Units	Estimated sales during Jan-Mar, 2008 Units	Desired Closing Stock on Mar 31, 2008 Units
AA	2000	10,000	5,000
BB	3000	15,000	4,000
CC	4000	13,000	3,000
DD	5000	12,000	2,000

Notes

Solution:

Production Budget for three months ending March 31, 2008

Particulars	AA Units	BB Units	CC Units	DD Units
Estimated Sales	10,000	15,000	13,000	12,000
Add: Desired closing stock	5,000	4,000	3,000	2,000
	15,000	**19,000**	**16,000**	**14,000**
Less: Opening Stock	2,000	3,000	4,000	5,000
Estimated Production	**13,000**	**16,000**	**12,000**	**9,000**

Task Mr. X Co. Ltd. manufactures two different products X and Y. X forecast of the number of units to be sold in first seven months of the year is given below:

Months	Product X	Product Y
Jan.	1,000	2,800
Feb.	1,200	2,800
Mar.	1,600	2,400
Apr	2,000	2,000
May	2,400	1,600
June	2,400	1,600
July	2,000	1,800

It is expected that (a) there will be no work in progress at the end of every month, (b) finished units equal to half the sales for the next month will be in stock at the end of each month (including the previous December).

Budgeted production and production costs for the whole year are as follows:

Production in Units		Product X	Product Y
		22,000	24,000
Per unit (Rs.)	Direct Material	10.00	15.00
	Direct Labour	5.00	10.00
Total factory overhead apportioned		88,000	72,000

9.4.2 Materials/Purchase Budget

This budget takes place only after identifying the number of finished products expected to produce to the tune of production budget, in meeting the needs and demands of the customers and consumers during the season.

In order to produce to the tune of production budget to meet the market demands, the raw materials for the production should be maintained sufficient to supply them without any interruption. To have uninterrupted flow of production, the firm should go for the immediate

Notes

procurement of raw materials through the multiplication of raw material required to produce for a single product with number of units expected to produce.

Why the stock of raw materials is deducted from the expected volume of materials procured for production to the tune of production budget?

If there is any existing stock of raw materials i.e. opening stock of raw materials available from the yester seasons or years should be deducted from the volume of materials required for production to be ordered and placed. The remaining volume should be the volume to be ordered for production.

Example: The sales manager of the MR Ltd. reports that next year he anticipates to sell 50,000 units of a particular product.

The production manager consults the storekeeper and casts his figures as follows:

Two kinds of raw materials A and B are required for manufacturing the product. Each unit of the product requires 2 units of A and 3 units of B. The estimated opening balances at the commencement of the next year are:

Finished product : 10,000 units

Raw Materials A : 12,000 units Raw Materials B : 15,000 units

The desirable closing balances at the end of the next year are

Finished products : 14,000 units

Raw materials A : 13,000 units Raw materials B : 1,000 units

Prepare production budget and materials purchase budget for the next year.

Solution:

The first step is to prepare the production budget. To identify the volume of materials required for production by considering the production budget and the closing stock of materials of A and B respectively.

Why the closing stock of raw materials has to be added with estimated consumption? The purpose of adding the closing stock of raw materials is to anticipate the future demand of them, due to market influence; which warrants the firm to go for placement of order not only taking into consideration of expected consumption of raw materials but also the closing stock of raw materials to be maintained at the end of the season, in order to facilitate to have uninterrupted flow of production.

Why the opening stock of raw materials has to be deducted?

The opening stock of raw materials, which is available in the firm, should be considered for the placement of order of raw materials. The materials to be ordered should be other than that of the materials available in the firm.

Production Budget (Units)

Estimated sales	50,000
Add: Desired Closing stock	14,000
	64,000
Less: Opening Stock	10,000
Estimated Production	**54,000**

Notes

Materials Procurement or Purchase Budget (Units)

	Material A	Material B
Estimated Consumption For A 2 units × 54, 000 For B 3 units × 54,000	1,08,000	1,62,000
Add: Closing Stock	13,000	16,000
	1,21,000	**1,78,000**
Less: Opening Stock	12,000	15,000
Estimated Purchases	**1,09,000**	**1,63,000**

Sales Budget

Sales Budget is an estimate of anticipation of sales in the near future prepared by the responsible person for the sale of a product by considering the various factors of influence. Sales budget is usually prepared in terms of quantity and value. The following factors are normally considered for the preparation of sales budget of a firm:

1. Last sales figures.
2. Estimates of the salesmen who is frequently operating in the market, known much greater than any body in the market.
3. Capacity of the plant and machinery to produce.
4. Funds availability.
5. Availability of raw materials to the tune of demand in the respective time period.
6. Changes in the taste and preferences of the customer or consumer.
7. Changers in the competition structure - Monopoly to Perfect competition — Previously BSNL was known as DOT as a monopoly in the market in affording the services till early 2000. Then later, the changes taken place in the market environment i.e. competition due to invasion of new entrants like Reliance, Hutch, Bharti tele ventures and so on; warrants careful preparation of sales budget of number of telephone connection expected to sell.

Example: Reynolds Pvt. Ltd. manufactures two brands of pen Light & Elite. The sales department of the company has three departments in different regions of the country.

The sales budgets for the year ending 31st Dec, 2008 Light department I-3,00,000; department-II 5,62,500;departm entIII-1,80,000.Elite– department I-4,00,000; department II-6,00,000; department-III-20,000.

Sales prices are ₹ 3 and ₹ 1.20 in all departments. It is estimated that by forced sales promotion the sales of Elite in department I will increase by 1,75,000. It is also expected that by increasing production and arranging extensive advertisement, department III will be enabled to increase the sale of Elite by 50,000.

It is recognized that the estimated sales by department II represent and unsatisfactory target. It is agreed to increase both estimates by 20%.

Prepare a sales budget for the year 2008.

Notes

Solution:

Sales budget should be prepared to the tune of various influences of forthcoming seasons' sales. The expected increase or decrease in the sales volume should be incorporated at the time of preparing the sales budget from the yester periods sale figures.

1. There is no change in the volume of existing sales of the department of I Light; the existing sales of the department I of the Light should be retained as it is for the computation of the budgeted figures, but there is a change expected to occur in the existing volume of sales of the department I of the Elite. The change expected amounted to increase 1,75,000 units in addition to the volume of existing sales i.e. the total volume of sales is equivalent to 4,00,000 units of existing volume of sales + 1,75,000 units expectation of increase= 5,75,000 units for Elite Department I.
2. In the II department of both Light & Elite expected to have an increase on the volume of existing sales amounted is 20% i.e. 20% increase on the Department II of Light 5,62,500 units amounted 6,75,000 units and similarly in the case of Department II of Elite 6,00,000 units amounted 7,20,000 units.
3. In the III department of Light does not have any change in the volume of existing sales, it means that 1,80,000 units has to be retained as it is in the computation of the budgeted figure but in the case of Elite, department III expected to have an increase in the volume of sales which amounted 20,000 units i.e. 70,000 units.

Sales Budget for the Year 2008

Selling Price	Light ₹ 3		Elite ₹ 1.20		Total
	Quantity	₹	Quantity	₹	₹
Department I	3,00,000	9,00,000	5,75,000	6,90,000	15,90,000
Department II	6,75,000	20,25,000	7,20,000	8,64,000	28,89,000
Department III	1,80,000	5,40,000	70,000	84,000	6,24,000
	11,55,000	**4,65,000**	**13,65,000**	**16,38,000**	**51,03,000**

Sales Overhead Budget

It is one of the important sub functional budgets, prepared by the sales manager who is responsible for the sales volume of the enterprise to increase through various devices/tools of sales promotion.

The sales overhead can be classified into two categories viz fixed sales overhead and variable sales overhead.

What is meant by the Fixed Sales Overhead?

Fixed sales overhead is the expenses incurred for promoting the sales, which remains the same or fixed irrespective of the volume of the sales.

Example:
1. Salaries to Sales Department
2. Salaries to the Administrative Staff
3. Salary to Salesmen

Variable sales overhead is the expenses incurred for the promotion of the sales, which is varying along with the volume of sales of the firm.

Notes

Example: 1. Sales commission

2. Agents commission

3. Carriage outward expenses.

The sales overhead budget is the statement of estimates of the various sales promotional expenses not only based on the early/yester period sales promotional expenses but also on the sales of previous years.

Example: The following expenses were extracted from the books of M/s Sudhir & Sons, to prepare the sales overhead budget for the year 2008:

	₹
Advertisement on	
Radio	2,000
Television	12,000
Salary to	
Sales Administrative Staff	20,000
Sales force	15,000
Expenses of the sales department	
Rent of the building	5,000
Carriage outward	5% on sales
Commission at sales	2%
Agents' commission	6.5%

The sales during the period were estimated as follows:

₹ 80,000 including Agents Sales ₹ 8,000

₹ 1,00,000 including Agents Sales ₹ 10,500

Solution:

The most important step is to find out the variable portion of the sales overhead of M/s Sudhir & Sons.

1. The calculation of salesmen's commission is on the basis of the sales volume generated by the salesmen force. The total sales volume consists of two different parts *viz.* Sales contributed by the sales force and another one is contribution of the agents. To find out the sales volume of the sales man, the portion of the agents' sales volume should be deducted from the total sales volume.

   Sales Force's/Men's Volume = Total Sales Volume – Agent's Sales Volume

   Similarly, the agents' sales volume can be computed.

2. From the early step, the amount of commission is to be computed from the volume of sales.

3. Carriage outward should be computed on the volume of sales.

Sales Overhead Budget for the Year 2008

Estimated Sales	₹ 80,000 Level	₹ 1,00,000 Level
Fixed Overhead		
Advertisement on Radio	2,000	2,000
Advertisement on TV	12,000	12,000

Contd...

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Salary to Sales Admin. Staff	20,000	20,000
Salary to Sales force	15,000	15,000
Expenses of the sales dept – Rent	5,000	5,000
Total Sales Fixed Overhead (A)	54,000	54,000
Variable Overhead Salesmen's Commission 2%	1,440	10,290
Agents' Commission 6.5%	520	682.5
Carriage outward 5%	4,000	5,000
Total Variable Overhead (B)	5,960	5682.5
Total Sales overhead(A+B)	**59,960**	**59682.5**

Cash Budget

Cash budget is nothing but an estimation of cash receipts and cash payments for specified period. It is prepared by the head of the accounts department i.e. chief accounts officer.

The utility of the cash budget is as follows:

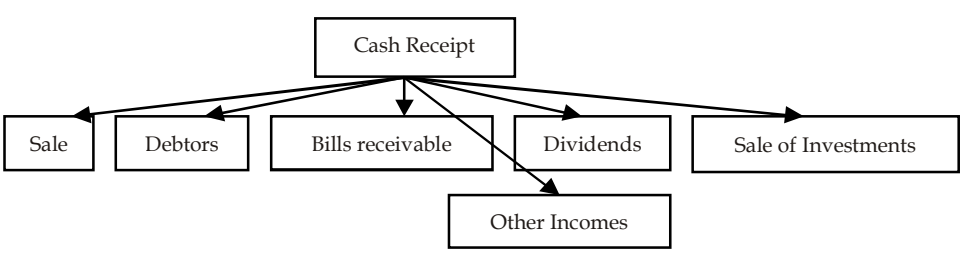
1. To meet the revenue and capital expenditures with adequate funds.
2. It should highlight the additional requirement cash whenever the need arises.
3. Keeping of excessive funds available in the business firm would not fetch any return to the enterprise but this estimate of future cash needs and resources will guide the firm to plan for an effective investment out of the surplus funds estimated; enhances the wealth of the investors through proper investment planning out of the future funds available.

Cash budget can be prepared in three different ways:

1. Receipts and payments method
2. Adjusted profit and loss account
3. Balance Sheet Method

Cash receipts can be classified into various categories:

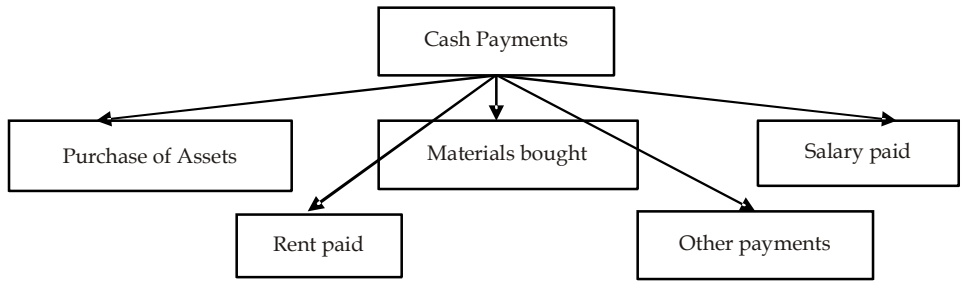
Figure 9.6



Notes

Cash payment are as follows:

Figure 9.7



Example: From the estimates of income and expenditure, prepare cash budget for the months from April to June.

Month	Sales (₹)	Purchases (₹)	Wages (₹)	Office Exp. (₹)	Selling Exp. (₹)
Feb.	1,20,000	80,000	8,000	5,000	3,600
Mar.	1,24,000	76,000	8,400	5,600	4,000
Apr.	1,30,000	78,000	8,800	5,400	4,400
May	1,22,000	72,000	9,000	5,600	4,200
June	1,20,000	76,000	9,000	5,200	3,800

1. Plant worth ₹ 20,000 purchase in June 25% payable immediately and the remaining in two equal instalments in the subsequent months
2. Advance payment of tax payable in Jan. and April ₹ 6,000
3. Period of credit allowed:
   (a) By suppliers 2 months
   (b) To customers 1 month
4. Dividend payable ₹ 10,000 in the month of June.
5. Delay in payment of wages and office expenses 1 month and selling expenses ½ month. Expected cash balance on 1st April is ₹ 40,000.

Solution:

1. Plant worth ₹ 20,000 purchased, payable immediately is 25% i.e. ₹ 5,000 should be paid in the month of June. The remaining cost of the machine has to be paid in the subsequent months, after June. The payments whatever are expected to make after June is not relevant as far as the budget preparation concerned.
2. Delay in the payment of wages and office expenses is only one month. It means wages and office expenses of Feb. month are paid in the next month, March.

   Selling expenses from the above coloured boxes, it is obviously understood that during the months of April, May and June; the following will be stream of payment of selling expenses.

Notes

April = ₹ 2,000 of Mar. (Previous Month) and ₹ 2,200 of April (Current month) = ₹ 4,200

May = ₹ 2,200 of April (Previous Month) and ₹ 2,100 of May (Current month) = ₹ 4,300

June = ₹ 2,100 of May (Previous Month) and ₹ 1,900 of June (Current month) = ₹ 4,000

3. Selling expenses is having the delay of ½ month, which means 50% of the selling expenses is paid only in the current month and the remaining 50% is paid in the next

Particulars	Feb.	Mar.	April	May	June
Selling Expenses	3,600	4,000	4,400	4,200	3,800
Payment 50% in the current month	1,800	2,000	2,200	2,100	1,900
Delay 50% will be paid in the subsequent month	1,800	2,000	2,200	2,100	1,900

Every month 50% of the selling expenses of the current month and 50% of the previous month selling expenses are paid together; the above coloured boxes depict the payment of 50% of the current selling expenses along with 50% expenses of previous month.

Cash Budget for the Periods (April and June)

Particulars	April (₹)	May (₹)	June (₹)
Opening Cash Balance	40,000	59,800	95,300
Cash Receipts			
Sales	1,24,000	1,30,000	1,22,000
Total Receipts (A)	1,64,000	1,89,800	2,17,300
Payments			
Plant Purchased	----------	---------	5,000
Tax payable	6,000	---------	--------
Purchases	80,000	76,000	78,000
Dividend payable	---------	---------	10,000
Wages	8,400	8,800	9,000
Office expenses	5,600	5,400	5,600
Selling expenses	4,200	4,300	4,000
Total Payments(B)	1,04,200	94,500	1,11,600
Balance (A-B)	59,800	95,300	1,05,700

9.4.3 Classification of the Budget in accordance with the Flexibility

Fixed Budget

It is a budget known as constant budget, never registers the changes in the preparation of a budget, being prepared for irrespective level of output or production. This budget is mainly meant for the fixed overheads of the firm which are constant in volume irrespective level of production. The ultimate utility of the budget is to control the cost as a cost controlling measure, but the fixed budget is meaningless in having comparison with the actual performance.

Flexible Budget

Flexible budget is prepared for any level of production as an estimate of statement of all expenses i.e. the expenses are classified into three categories *viz.* variable, semi-variable and fixed expenses.

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The structure of the budget for any output is only to the tune of the actual performance achieved. This is the budget facilitates not only to have comparison in between various levels of production but also to identify the level of lowest production cost.

Utilities of the flexible budget:

1. This budget is most useful tool of analysis in studying the sales at when the circumstances are not warranting to predict.
2. It is mostly suited to the seasonal business, where the sales volume is getting differed from one period to another due to changes taken place in the taste and preferences of the buyers.
3. The production is being done on the basis of demand of the products in the market. The demand of the products is studied only through demand forecasting. The flexible budget is more applicable in the case of products, which are greatly finding difficult to forecast the demand.
4. The budget is prepared only during the time of acute shortage of resources of production *viz.* Men, Material and so on.

Example: Draft a flexible budget for overhead expenses on the basis of following information and determine the overhead rates at 70%, 80% and 90% plant capacity.

Particulars	70% capacity	80% capacity (₹)	90% capacity
Variable Overheads Indirect Labour	----------	24,000	----------
Stores including spares	----------	8,000	----------
Semi-variable overheads Power 30% fixed ,70% variable	----------	40,000	----------
Repairs and maintenance 80% fixed and 20% variable	----------	4,000	----------
Fixed Overheads Depreciation	----------	22,000	----------
Insurance	----------	6,000	----------
Salaries	----------	20,000	----------
Total overheads	----------	1,24,000	----------

Flexible Budget for the Period

Particulars	70% capacity	80% capacity	90% capacity
Variable overheads Indirect labour	21,000	24,000	27,000
Stores including spares	7,000	8,000	9,000
Semi-variable Expenses - Power* Fixed 30%	8,000	8,000	8,000
**Variable 70%	28,000	32,000	36,000
Repairs and maintenance ***Fixed 80%	3,200	3,200	3,200
****Variable 20%	700	800	900

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Fixed Overheads			
Depreciation	22,000	22,000	22,000
Insurance	6,000	6,000	6,000
Salaries	20,000	20,000	20,000
Total Overheads	1,15,900	1,24,000	1,32,100

Master Budget

Immediately after the completion of functional or departmental level budgets, the major responsibility of the budget officer is to consolidate the various budgets together, which is detailed report of all operations of the firm for a definite period.

9.5 Innovative Budgeting Techniques

The following are the key innovative budgeting techniques:

9.5.1 Programme Budgeting

Program Budgets are sometimes used by municipalities, but will almost certainly be required for grant applications. A program budget delineates all the costs associated with doing something.

Example: A grant application for funds to establish a homework center at the Eastside Branch would include the cost of the staff, the equipment, furniture, electricity, training materials, grant administrative costs, and so forth.

The disadvantage of a Program Budget is that when all library services (programs) are delivered from a single building, delineating projected costs among them is certainly possible. But at the end of the day they have to be re-aggregated to find out what the library is really spending on, e.g. power and gas.

9.5.2 Performance Budgeting

According to the National Institute of Bank Management, Mumbai, performance budgeting technique is the process of analysing identifying, simplifying and crystallizing specific performance objectives of a job to be achieved over a period in the framework of the organisational objectives, the purpose and objectives of the job. The technique is characterised by its specific direction towards the business objectives of the organisation.

Caution The concept of performance budgeting relates to greater management efficiency especially in government work. With a view to introducing a system's approach, the concept of performance budgeting was developed and as such there was a shift from financial classification to 'cost' or 'objective' classification. Performance budgeting, is therefore, looked upon as a budget based on functions, activities and projects and is linked to the budgetary system based on objective classification of expenditure.

Notes

According to the above information, the author says that performance budgeting lays immediate stress on the achievement of specific goals over a period of time. It requires preparation of periodic performance reports. Such reports compare budget and actual data and show any existing variances.

Purpose of Performance Budgeting

The purpose of performance budgeting is to focus attention upon the work to be done, services to be rendered rather than things to be spent for or acquired. In performance budgeting, emphasis is shifted from control of inputs to efficient and economic management of functions and objectives. Performance budgeting takes a systematic view of activities by trying to associate the inputs of the expenditure with the output of accomplishment in terms of services, benefits, etc.

The main purposes of performance budgeting are:

1. To review at every stage, and at every level of the organisation, so as to measure progress towards the short-term and long-term objectives.
2. To inter-relate physical and financial aspects of every programme, project or activity.
3. To assess the effects of the decision-making of supervisor to the middle and top-managers.
4. To bring annual plans and budgets in line with the short and long-term plan objectives.
5. To present a comprehensive operational document showing the complete planning fabric of the programmes and prospectus and their objectives inter-woven with the financial and physical aspects.
6. To facilitate more effective performance audit.

Limitation of Performance Budgeting

1. Performance budgeting has certain limitations such as difficulty in classifying programmes and activities.
2. Problems of evaluation of various schemes, relegation to the background of important programmes.
3. The technique enables only quantitative evaluation scheme. Sometimes, the needed results cannot be measured.

9.5.3 Responsibility Accounting

Responsibility accounting is an underlying concept of accounting performance measurement systems. The basic idea is that large diversified organizations are difficult, if not impossible to manage as a single segment, thus they must be decentralized or separated into manageable parts. These parts, or segments are referred to as responsibility centers that include:

1. Revenue centers,
2. Cost centers,
3. Profit centers, and
4. Investment centers.

Responsibility accounting is appropriate where top management has delegated authority to make decisions. The idea behind responsibility accounting is that each manager's performance should be judged by how well he or she manages those items under his or her control. This

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approach allows responsibility to be assigned to the segment managers that have the greatest amount of influence over the key elements to be managed. These elements include revenue for a revenue center (a segment that mainly generates revenue with relatively little costs), costs for a cost center (a segment that generates costs, but no revenue), a measure of profitability for a profit center (a segment that generates both revenue and costs) and Return on Investment (ROI) for an investment center (a segment such as a division of a company where the manager controls the acquisition and utilization of assets, as well as revenue and costs).

Cost Center

A cost center is the smallest segment of activity or area of responsibility for which costs are accumulated. Obviously most business units incur costs, so this alone does not define a cost center. A cost center is perhaps better defined by what is lacking; the absence of revenue, or at least the absence of control over revenue generation.

Human resources, accounting, legal, and other administrative departments are expensive to support and do not directly contribute to revenue generation. Cost centers are also present on the factory floor. Maintenance and engineering fall into this category. Many businesses also consider the actual manufacturing process to be a cost center even though a saleable product is produced (the sales "responsibility" is shouldered by other units).

It stands to reason that assessments of cost control are key in evaluating the performance of cost centers. This chapter will show how standard costs and variance analysis can be used to pinpoint areas where performance is above or below expectation. Cost control should not be confused with cost minimization. It is easy to reduce costs to the point of destroying enterprise effectiveness. The goal is to control costs while maintaining enterprise effectiveness.

Non-financial metrics are also useful in monitoring cost centers: documents processed, error rates, customer satisfaction surveys, and other similar measures can be used.

Example: 1. The manager for purchasing department.

2. The manager for maintenance department.

Revenue Center

Revenue center can be defined as a distinctly identifiable department, division, or unit of a firm that generates revenue through sale of goods and/or services.

Example: Rooms department and food-and-beverages department of a hotel.

Profit Center

Some business units have control over both costs and revenues and are therefore evaluated on their profit outcomes. For such profit centers, "cost overruns" are expected if they are coupled with commensurate gains in revenue and profitability.

Example: A restaurant chain may evaluate each store as a separate profit center. The store manager is responsible for the store's revenues and expenses. A store with more revenue would obviously generate more food costs; an assessment of food cost alone would be foolhardy without giving consideration to the store's revenues.

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Thus, profit center is a segment of a business, often called a division that is responsible for both revenue and expenses. The reason been Revenue minus Cost is the Profit.

The manager is therefore overall responsible or accountable for making profit for the company.

Example: A company has many restaurants which are all profit centre. A manager is assigned to each restaurant to make sure it is a profit centre.

Investment Center

At higher levels within an organization, unit managers will be held accountable not only for cost control and profit outcomes, but also for the amount of investment capital that is deployed to achieve those outcomes. In other words, the manager is responsible for adopting strategies that generate solid returns on the capital they are entrusted to deploy. Evaluation models for investment centers become more complex and diverse. They usually revolve around various calculated rates of returns.

Thus, an investment center, like a profit center, is responsible for both revenue and expenses, but also for related investments of capital.

Example: An example of an investment centre is a Corporate division responsible for project investments.

Here, the manager is responsible for the investments which includes all the revenue, costs and investments (invested capital or assets)

Outside of relatively large corporations, the cost center is the most common building block for responsibility accounting. In fact, the terms cost center and responsibility center are often used interchangeably.

Task Analyse different centers of a food chain of your choice and categorise them into various types of responsibility centers.

9.5.4 Zero Based Budgeting

Zero-base budgeting is one of the renowned managerial tool, developed in the year 1962 in America by the Former President Jimmy Carter. The name suggests, it is commencing from the scratch, which never incorporates the methodology of the other types of budgeting in determining the estimates. The Zero base budgeting considers the current year as a new year for the preparation of the budget but the yester period is not considered for consideration. The future activities are forecasted through the zero base budgeting in accordance with the future activities.

Peter A Pyher "A planning and budgeting process which requires each manager to justify his entire budget request in detail from scratch (Hence zero base) and shifts the burden of proof to each manger to justify why he should spend money at all. The approach requires that all activities be analysed in "decision packages" which are evaluated by systematic analysis and ranked in order of importance."

This type of budgeting requires the manager to reason out the aim of spending, but in the case of traditional budgeting is unlike, which are never emphasize the reasons of spending in terms of expenses.

Notes

Notes Traditional Budgeting vs Zero Base Budgeting

Basis of Difference	Traditional Budgeting	Zero Base Budgeting
Emphasis	It is accounting oriented; emphasis on "How Much"	It is more decision oriented; emphasis on "Why"
Approach	It is monitoring towards the expenditures	It is towards the achievement of objectives
Focus	To study the changes in the expenditures	To study the cost benefit analysis
Communication	It operates only Vertical communication	It operates in both directions horizontally and vertically
Method	It is based on the extrapolation i.e from the yester figures future projections are carried out	Its decision package is totally based on the cost benefit analysis.

Steps involved Zero-base Budgeting

1. The very first step is to prepare the Zero-base Budgeting is to enlist the objectives.
2. The extent of application should be decided in the next phase of the ZBB.
3. The next important stage is to prioritize the activities.
4. The Most important step involved in the process of ABB is cost benefit analysis.
5. The final step is to select, approve the decision packages and finalise the budget.

Benefits of Zero-base Budgeting

1. It acts as guide for the management to allocate the resources more accurately depends upon the priority for an effective implementation.
2. It enhances capability of the managers who prepares the budget for future action.
3. It paves way for optimum utilization of resources available.
4. It is a technique of utilitarian of the resources with reference to the activity involved.
5. It is dome shaped only towards the achievement of organizational goals.

Criticism of Zero-based Budgeting

1. Non-financial matters cannot be considered for the cost and benefit analysis.
2. Difficulties involved in the process of ranking of the decision packages.
3. It needs more time span for preparation and cost of operations is more and more.

Notes

Caselet

CMDA wants Budgetary Control over City Agencies

The Chennai Metropolitan Development Authority (CMDA) cannot take pro-active measures with regard to the second Master Plan, unless it is empowered with budgetary control over sectorial agencies, said CMDA's deputy planner S Chitra.

These agencies include housing board, slum clearance board, corporation and the transport sector.

After her presentation on 'Sustainable and inclusive development: a focus on second Master Plan for Chennai Metropolitan Area 2026', the CMDA official had to field a volley of questions from the audience which was critical of the CMDA's inability to translate plans into action.

At the question-answer session of the seminar, 'Utopia and the city', organised by Goethe Institut at IIT Madras on Friday, participants accused the CMDA of merely being a watchdog. "The Master Plan is a macro-level plan, and we do not have the powers to implement infrastructure development issues in the city. We should have budgetary control over sectorial agencies to implement the same," she added. Until 1974, the budgetary control rested with CMDA, but changed after that, with powers vested with agencies such as housing board, slum clearance board, corporation and the transport sector.

Denying charges that the second Master Plan was just a shell presented to the outside world, with no information on what was being planned on the 'inside', the deputy planner said the city was on the threshold of change. "We are struggling to find a suitable model and CMDA has established a good network with all the entities involved in infrastructure development plans in the city." Pointing out that 11% of the state's population lived in one per cent of its area, Chitra said that by 2026, housing would be a major challenge in the Chennai Metropolitan Area (CMA). "We are using GIS for evaluating land use system and the results will be on our website in three months' time," she added. Traffic and transportation would pose a challenge as well in 2026, with an estimated 2.70 lakh daily commuters needing infrastructure backing, she added.

Source: timesofindia.indiatime.com

9.6 Summary

- Budget is an estimate prepared for definite future period either in terms of financial or non-financial terms.
- Cost control contains two different processes one is the preparation of the budget and another one is the control of the prepared budget.
- The production budget is a statement of goods, how much should be produced.
- The ultimate aim of the production budget is to find out the volume of production to be made during the year based on the sale volume.
- Sales Budget is an estimate of anticipation of sales in the near future prepared by the responsible person for the sale of a product by considering the various factors of influence.
- The expected increase or decrease in the sales volume should be incorporated at the time of preparing the sales budget from the yester periods sale figures.

Notes

- Cash budget is nothing but an estimation of cash receipts and cash payments for specified period. It is prepared by the head of the accounts department i.e. Chief Accounts Officer.
- Constant budget is mainly meant for the fixed overheads of the firm, which are constant in volume irrespective level of production.
- Zero-base budgeting is one of the renowned managerial tools, developed in the year 1962 in America by the Former President Jimmy Carter.
- The Zero-base budgeting considers the current year as a new year for the preparation of the budget but the yester period is not considered for consideration.
- The future activities are forecasted through the zero base budgeting in accordance with the future activities.
- Responsibility accounting is a concept of accounting performance measurement systems.
- The basic idea under responsibility accounting is that large diversified organizations are difficult, if not impossible to manage as a single segment.

9.7 Keywords

Budget Control: Quantitative controlling technique to assess the performance of the organization.

Budget: A financial statement prepared for specified activity for future periods.

Budgeting: Activity of preparing the budget is known as budgeting.

Cash Budget: It is a statement prepared by the organization to identify the future needs and receipts of cash from the yester activities.

Cost center: A cost center is part of an organization that does not produce direct profit and adds to the cost of running a company.

Flexible Budget: It is a financial statement prepared on the basis of principle of flexibility to identify the cost of the unknown level of production from the existing level of operational capacity.

Investment center: A unit within an organisation whose manager not only has profit responsibility but also some influence on capital expenditures.

Profit Center: A segment of a business for which costs, revenues, and profits are separately calculated.

Revenue Center: Unit within an organization that is responsible for generating revenues.

9.8 Self Assessment

Choose the appropriate answer:

1. Budget is a statement of

   (i) Qualitative affairs (ii) Quantitative affairs

   (iii) Financial affairs (iv) Both (b) & (c)

2. Budgets can be classified into

   (i) By functions (ii) By time

   (iii) By flexibility (iv) (a), (b) & (c)

Notes

3. Production budget is under the classification of
   (i) By time (ii) By flexibility
   (iii) By function (iv) None of the above
4. Why opening stock is deducted in the production budget calculation?
   (i) Current year opening stock (ii) Closing stock is added
   (iii) It is out of the yester production (iv) None of the above
5. What is a method in determining the cash balance of the respective period?
   (i) Opening balance + Cash payments – Cash receipts
   (ii) Cash receipts + Cash payments – Opening cash balance
   (iii) Opening balance + Cash receipts – Cash payments
   (iv) None of the above
6. Which budget is inter related budget with production budget?
   (i) Sales budget (ii) Production budget
   (iii) Flexible budget (iv) Purchase budget
7. Sale overhead budget is the budget of
   (i) Fixed overhead (ii) Variable overhead
   (iii) Both (a) & (b) (iv) None of the above

Fill in the blanks:

8. Budget is an estimate prepared for definite ..... period.
9. The preparation of the production budget is mainly dependent on the ..... budget.
10. The production volume is connected to the ..... environment of the firm.
11. ..... budget takes place only after identifying the number of finished products expected to produce to the tune of production budget.
12. ..... Budget is one of the important sub functional budgets, prepared by the sales manager.
13. Cost control contains two different processes one is the ..... of the budget and another one is the ..... of the prepared budget.
14. ..... budgeting considers the current year as a new year for the preparation of the budget but the yester period is not considered for consideration.
15. ..... overhead is the expense incurred for the promotion of the sales.

9.9 Review Questions

1. From the following figures extracted from the books of KPZ Ltd., Prepare raw materials procurement budget on cost:

Particulars	A	B	C	D	E	F
Estimated stock on Jan. 1	16,000	6,000	24,000	2,000	14,000	28,000
Estimated stock on Jan. 31	20,000	8,000	28,000	4,000	16,000	32,000
Estimated consumption	1,20,000	44,000	1,32,000	36,000	88,000	1,72,000
Standard price per unit	25 p	.10p	.50p	.30p	.40p	.50p

Notes

2. Sankaran Bros sell two products A and B, which are manufactured in one plant. During the year 2008, the firm plans to sell the following quantities of each product.

Product	April-June	July-September	October- December	January-March
Product A	90,000	2,50,000	3,00,000	80,000
Product B	80,000	75,000	60,000	90,000

Each of these two products is sold on a seasonal basis Sankaran Bros, plan to sell product A through out the year at price of ₹ 10 a unit and product B at a price of ₹ 20 per unit.

A study of the past experiences reveals that Sankaran bros has lost about 3% of its billed revenue each year because of returns (constituting 2% of loss if revenue allowances and bad debts 1% loss).

Prepare a sales budget incorporating the above information.

3. Gopi & Co. Ltd. produces two products, Alpha and Beta. There are two sales divisions *viz.* North and South. Budgeted sales of the year ended 31st December 2008 were as follows.

Division	Products	Units	Price per unit (₹)
North	Alpha	25,000	10
	Beta	15,000	5
South	Alpha	24,000	10
	Beta	30,000	5

Actual sales for the period were

Product	North	South
Alpha	28,000 units @ ₹ 10 each	25,000 units @ ₹ 10 each
Beta	18,000 units @ ₹ 5 each	33,000 units @ ₹ 5 each

On the basis of assessments of the salesmen the following are the observations of sales division for the year ending 31st December 2009:

North Alpha budgeted increase of 40% on 2008 budget

Beta budgeted increase of 10% on 2008 budget

South Alpha budgeted increase of 12% on 2008 budget

Beta budgeted increase of 15% on 2008 budget

It was further decided that because of the increased sales campaign in North an additional sales of 5,000 units of product will result.

Prepare the sales budget for 2009 (a) zonewise (b) productwise.

4. From the following information prepare a cash budget for the months of June and July.

Month	Credit sales (₹)	Credit purchase (₹)	Manufacturing overheads (₹)	Selling overheads (₹)
April	80,000	60,000	2,000	3,000
May	84,000	64,000	2,400	2,800
June	90,000	66,000	2,600	2,800
July	84,000	64,000	2,000	2,600

Notes

Additional Information:

(a) Advance tax of ₹ 4,000 payable in June and in December 2008.

(b) Credit period allowed to debtors is two months.

(c) Credit period allowed by the vendors or suppliers.

(d) Delay in the payment of other expenses one month.

(e) Opening balance of cash on 1st June is estimated as ₹ 20,000.

5. The expenses for budgeted production of 10,000 units in a factory are furnished below:

Particulars	Per unit
Material	70
Labour	25
Variable overheads	20
Fixed overheads (1,00,000)	10
Variable expenses (Direct)	5
Selling expenses (10% fixed)	13
Distribution expenses (20% fixed)	7
Administration expenses (Rs.50,000)	5
Total cost per unit	155

Prepare a budget for production of:

(a) 8,000 units

(b) 6,000 units

(c) Calculate the cost per unit at both levels.

Assume that administration expenses are fixed for all level of production.

6. From the following information relating to 2008 and conditions expected to prevail in 2009, prepare a budget for 2009:

State the assumption you have made, 2008 actuals

Sales	1,00,000 (40,000 units)
Raw materials	53,000
Wages	11,000
Variable overheads	16,000
Fixed overheads	10,000
2009 prospects	
Sales	1,50,000 (60,000 units)
Raw Materials	5 per cent price increase
Wages	10 per cent increase in wage rates
	5 per cent increase in productivity
Additional plant	One lathe ₹ 25,000
	One drill ₹ 12,000

Notes

7. "Budgetary control is a system which uses budgets as a means of planning and controlling all aspects of producing and/or selling commodities and services." Comment.

8. If the current year production is not equivalent to the current year sales, why does the closing stock arise in the business?

9. What do you think are the causes behind an unfavorable fixed overhead budget variance?

10. Victoria Kite Company, a small Melbourne firm that sells kites on the web wants a master budget for the next three months, beginning January 1, 2005. It desires an ending minimum cash balance of $5,000 each month. Sales are forecasted at an average wholesale selling price of $8 per kite. In January 1, Victoria Kite is beginning Just-In-Time (JIT) deliveries from suppliers, which means that purchases equal expected sales.

    On January 1, purchases will cease until inventory reaches $6,000, after which time purchases will equal sales. Merchandise costs average $4 per kite. Purchases during any given month are paid in full during the following month. All sales are on credit, payable within 30 days, but experience has shown that 60% of current sales are collected in the current month, 30% in the next month, and 10% in the month thereafter. Bad debts are negligible.

    Monthly operating expenses are as follows:

Wages and Salaries	$15,000
Insurance Expired	125
Depreciation	250
Miscellaneous	2,500
Rent 250/Month + 10% of Quarterly	
Sales over	$10,000

    Cash dividends of $1,500 are to be paid quarterly, beginning January 15, and are declared on the fifteenth of the previous month. All operating expenses are paid as incurred, except insurance, depreciation and rent. Rent of $250 is paid at the beginning of each month, and the additional 10% of sales is paid quarterly on the tenth of the month following the end of the quarter. The next settlement is due January 10. The company plans to buy some new fixtures for $3,000 cash in March.

    Money can be borrowed and repaid in multiples of $500 at an interest rate of 10% per annum. Management wants to minimize borrowing and repay rapidly. Interest is computed and paid when the principal is repai(d) Assume that borrowing occurs at the beginning, and repayments at the end of he months in question. Money is never borrowed at the beginning and repaid at the end of the same month. Compute the interest to the nearest dollar.

    Assets as of Dec 31, 2004 Liabilities as of Dec. 31, 2004

    Cash $5,000 Accounts Payable (Merchandise) $35,550

    Accounts Receivable 12,500 Dividends Payable 1,500

    Inventory* 39,050 Rent Payable 7,800

    Unexpired Insurance 1,500 = $44,850

    Fixed assets, net 12,500

    = $70,550

Notes

* November 30 inventory balance = $16,000

Recent and Forecasted sales:

October = $38,000, December = $25,000, February = $75,000, April = $45,000

November = 25,000, January = 62,000, March = 38,000

Prepare a master budget including a budgeting income statement, balance sheet, statement of cash receipts and disbursements, and supporting schedules for the months January through March 2005.

11. In the above question, analyse if and why there is a need for a bank loan and what operating sources provides the cash for the repayment of the bank loan?

Answers: Self Assessment

1.	iv	2.	iv
3.	iii	4.	iii
5.	iii	6.	i
7.	iii	8.	Future
9.	Sales	10.	Internal
11.	Materials/Purchase	12.	Sales Overhead
13.	preparation, control	14.	Zero base
15.	Variable sales		

9.10 Further Readings

Books

B.M. Lall Nigam and I.C. Jain, *Cost Accounting*, Prentice-Hall of India (P) Ltd.

Hilton, Maher and Selto, *Cost Management*, 2nd Edition, Tata McGraw-Hill Publishing Company Ltd.

M.N. Arora, *Cost and Management Accounting*, 8th Edition, Vikas Publishing House (P) Ltd.

M.P. Pandikumar, *Management Accounting*, Excel Books.

Online links

www.allinterview.com

www.authorstream.com

Notes

Unit 10: Standard Costing

CONTENTS

Objectives

Introduction

10.1 Meaning of Standard Costing

10.2 Budgetary Control and Standard Costing

10.3 Estimated Costing

10.4 Standard Costing as a Management Tool

10.5 Limitations of Standard Costing

10.6 Determination of Standard Cost

10.7 Standard Cost Sheet

10.8 Summary

10.9 Keywords

10.10 Self Assessment

10.11 Review Questions

10.12 Further Readings

Objectives

After studying this unit, you will be able to:

- Explain the meaning of standard costing
- Describe budgetary control and standard costing
- Define estimated costing
- Discuss the standard costing as a management tool and limitations of standard costing
- Illustrate the determination of standard cost and cost sheet

Introduction

Standard costing is a tool, which replaces the bottleneck of the historical costing. Historical costing is one of the tools, which fulfills the one of the objectives of costing i.e. ascertainment of costs. The cost of a product can be ascertained only after the production of a product; which is meant as "Historical costing".

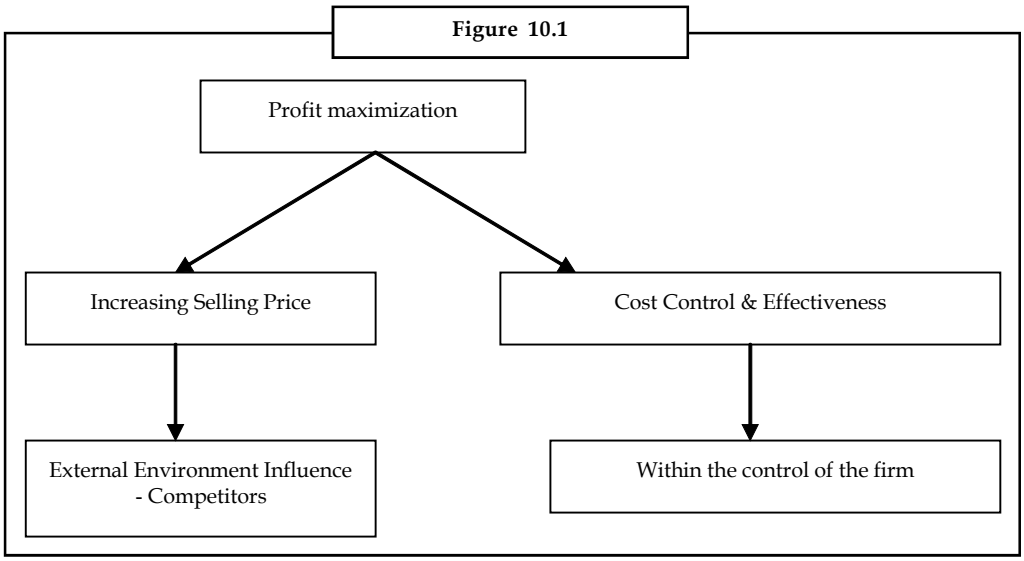
Why standard costing is considered to be more important than the Historical Costing?

Historical costing facilitates to ascertain the cost of a product which is connected with yester operations or with past. The ultimate aim of studying this unit is to control the cost of a product as one among the objectives of cost effectiveness strategy of the business enterprise.

Notes

The profit maximization can be had by way of implementing the following two different strategies:

Figure 10.1



From the following equation, the profit can be maximized

Selling Price – Cost = Profit

There are two possible ways to maximize the profit:

1. Increasing the selling price and keeping the cost remains the same.
2. Reducing the cost and retaining the selling price as it is.

Did u know? Why the later is more feasible than the earlier?

It is explained through two different strategies. They are as follows:

Strategy No. 1

Increasing selling price: Higher price/Increased price is inversely correlated with the demand of the product. This will affect the volume of sales due to the competitors stand on the lowest price. It is obviously understood that the maximization of profit through an increase in the price of a product will lead to loose the buyers. Earning/maximizing profits through increased selling price is not under the clutches of the business enterprises. It means that increasing the selling price to maximize profit is influenced by too many uncontrollable factors. This leads to sources of too much reluctance of business fleeces to raise the selling price.

Strategy No. 2

Reducing/cutting down the cost: To maximize the benefits, the second best alternative is to cut/reduce the cost of operations in producing a product or service. Minimizing the cost is a cumber some task which involves a lot of careful analysis and practices. Historical costing is not an effective tool of analysis in providing the required information for management to take rational decisions.

Notes

To replace the bottleneck associated with the historical costing as well to control the cost, the planned standards are usually developed under the head of standard costing technique to compare the actuals to identify the deviations. The standard plans should be developed on the following basis viz:

1. Cost of materials
2. Cost of labour
3. Other cost of manufacturing
4. Overall cost of a product.

10.1 Meaning of Standard Costing

Standard is nothing but an expected or anticipated performance in normal situations. The standards are quantitative in phenomenon which are in connection with one activity and differs from the another.

Examples:

1. Kg of raw materials expected to produce one unit of product.
2. Hours are expected/anticipated to consume for production of a single unit of product.

Standards are classified into two categories, *viz.* Revenue standards and Cost standards.

Standard cost is a predetermined cost, which is estimated from management's standard of efficient operation and the relevant necessary expenditure, according to ICWA (London).

The standard cost is related to variable portion of the cost of a product. The variable portion of cost of product depends on the following:

1. Material consumption
2. Hours taken/consumed
3. Incurring of miscellaneous expenditures - Overheads.

Standard costing is a system, which involves the various steps:

The first step in implementing the standard costing system is to develop the pre-determined standards i.e., standard costs.

The second step is to record the actual costs through the ascertainment.

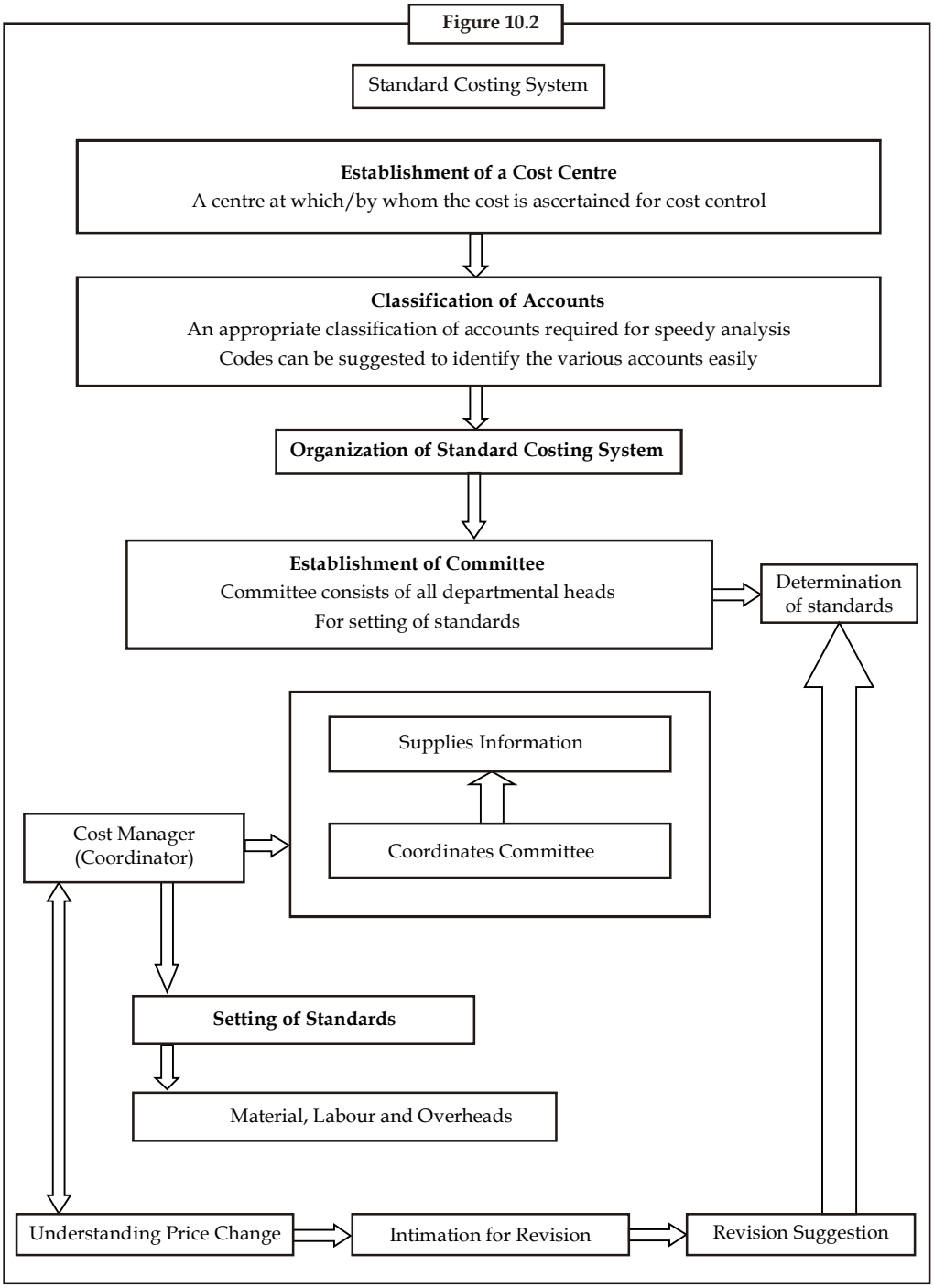
The third step involves with the comparison between the standards and actual costs; which is the origin of the variance analysis. Standard costing starts with the preparation of standards and ends with the comparison in between them. The preparation of standard costs is meaningful only through the completion of variance analysis.

The fourth step is the stage at which the reasons for variances are probed and analysed to incorporate the cost effectiveness not only to reduce cost but also to enhance the levels of profit.

The final step is the most important in the organization to take managerial decisions through an appropriate reporting. The figure 10.2 explains the standard costing system:

Notes

Figure 10.2



Notes

Caselet

Standard Costing in Jute Industry

Jute industry offers scope for implementing standard costing, says Dhruba Kumar Dutt in Industrial Management in India from Purple Peacock (www.bharatbooks.com). The author divides jute costing into three: Spun jute yarn, woven jute cloth, and finished jute cloth/bag. "To arrive at the cost of jute yarn, one has to start from the stage of batching," explains Dutt. Jute mills use a ready-reckoner type of table to blend jute of various kinds in fixed proportions; this is softened and converted into ₹jute yarn of the required count.' Costing department receives daily reports that show ₹the quantity of each kind of jute consumed in the batching process.' Standardised numbers are available of raw jute consumption for producing one tonne of spun yarn; also known are percentages of waste in each process stage from batching to spinning.

"Direct and indirect labour costs are carefully split up and charged to the processed material of each kind," be it hessian/sacking warp/weft. Winding section has piece-rate workers winding both cops and beams. "In the weaving stage, costs of warp and weft yarns (in beams and cops) for producing jute cloth of any particular kind is calculated by ascertaining the consumption of beams and cops." Move on then to the sewing department, where you can compute the cost of jute cloth and jute yarns required to manufacture a bag. Sack sewers work on piece rate. Successful standardisation hinges on minute observations and experiments, notes Dutt. "Thus standard costing should be viewed as part of industrial management," he argues.

Source: http://www.thehindubusinessline.in

10.2 Budgetary Control and Standard Costing

The systems of standard costing and budgetary control have the common objectives of controlling business operations by establishment of pre-determined targets, measuring the actual performances and comparing it with the targets, for the purpose of having better efficiency and of reducing costs. The two systems are said to be inter-related but they are not inter-dependent. Standard costing is introduced primarily to ascertain efficiency and effectiveness of cost performance. Budgetary control is introduced to state in figures an approved plan of action relating to a particular period. Both standard costing and budgetary control have the following common features:

(i) Both have a common objective of improving managerial control.

(ii) Both techniques are based on the presumption that cost is controllable.

(iii) In both the techniques, results of comparison are analysed and reported to management.

Notes

Notes **Difference between Standard Costing and Budgetary Control**

	Standard Costing	Budgetary Control
(i)	It is revealed with the control of expenses and hence it is more intensive.	It is concerned with the operation of the business as a whole and hence it is more extensive.
(ii)	Standard costs are based on technical assessments.	Budgets are based on past actuals, adjusted to future trends.
(iii)	To establish standard costs, some form of budgeting is essential as there is the need to forecast the level of output and prescribed set of working conditions in the periods in which the standard costs are to be used.	Budgetary control can be applied even without the help of standard costing.
(iv)	Standards are set mainly for production and production expenses.	Budgets are compiled for all items of income and expenditure.
(v)	Standard cost is the projection of cost accounts.	Budget is a projection of financial accounts.
(vi)	Standards set up targets that are to be attained by actual performance.	Budgets set up maximum limits of expenses above which the actual expenditure should not normally exceed.
(vii)	In standard costing, variances are analysed in detail according to their originating causes. It reveals variances through different accounts, such as, material price variance, usage variance, etc.	In budgetary control, variances are not related through the related accounts but are revealed in total.
(viii)	Standard costs do not tell what the costs are expected to be, but rather what the costs should be under specific conditions of production performance and as such cannot be used for the purpose of forecasting.	Budgets are anticipated or expected costs meant to be used for forecasting requirements of material, labour, cash, etc.
(ix)	Standard costs are used in various management decisions, price fixing, value analysis, valuation of closing stock, etc.	It aims in policy determination, co-ordination of activities in different divisions and delegation of authority.

10.3 Estimated Costing

Standard costs and estimated costs are predetermined costs, but their objectives are different. Important points of difference between the two are as follows:

	Standard Cost	Estimated Cost
(i)	Standard cost can be applied in a business operating under standard costing system.	Estimated costs can be used in any business which is running under historical costing system.
(ii)	Standards are meant for controlling future performances.	Estimates are prepared mainly for price fixing purposes.
(iii)	Standard costs are determined on a scientific basis keeping in view certain factors and conditions of efficiency.	Estimated costs are calculated on the basis of past performance adjusted in the light of anticipated changes in the future.

Contd...

Notes

(iv)	Standard costs are used as a regular system of accounts from which variances are found out.	The use of estimated cost is as statistical data only.
(v)	Standard costs are to be fixed in respect of every element of cost and therefore, they incorporate whole of the manufacturing process.	Estimated costs can be ascertained for a part of the business and also for a particular purpose.

10.4 Standard Costing as a Management Tool

Standard costing is a very useful managerial tool for cost control and cost reduction. The following are the main advantages of standard costing:

1. Standard costing is a valuable aid to management in formulating price and production policies and in performing managerial functions.
2. Human beings often work hard to achieve standards that are within their reach; therefore, setting up of such standards will almost automatically mean greater efficiency in operations. Further, almost everyone will think in terms of setting the targets and of achieving them. This will be specially so if the system of rewards and punishment is also geared to the results.
3. Even for valuation of inventory, standard cost should be the proper basis. If actual costs are high only because there has been a wastage of resources, it is not proper to capitalise those losses by including them in the value of inventory. Nothing becomes more valuable simply because of wastage and, therefore, inventory values should better be determined on the basis of standard costs.
4. In short, one can say that if a firm practices standard costing on proper lines, i.e., standards are themselves determined in a way that will not impose too great a burden on the worker or other employees or the firm, it may infuse in the minds of the staff a desire to achieve the standards and thus show greater efficiency.
5. At every stage of setting the standards, simplification and standardisation of productions, methods and operations are effected and waste of time and material is eliminated. This assists in managerial planning for efficient operation and benefits all the divisions of the concern.
6. Costing procedure is simplified. There is a reduction in paperwork in accounting and less number of forms and records are required. There is considerable saving in clerical time and expenditure, leading to reduction in the cost of the costing system.
7. This system facilitates delegation of authority and fixation of responsibility for each department or individual.
8. Where constantly reviewed, the standards provides means for achieving cost reduction. This is attained through improved quality of products, better materials and men, effective selection and use of capital resources, etc.
9. Standard costs assist in performance analysis by providing ready means for preparation and interpretation of information.
10. This facilitates the integration of accounts so that reconciliation between cost accounts and financial accounts may be eliminated.
11. Standards serve as yardsticks against which actual costs are compared. Whenever variances occur, reasons are studied and immediate corrective measures are undertaken. Thus, it facilitates effective cost control and provides necessary information for cost reduction.

Notes

12. It creates an atmosphere of cost consciousness among executives, foremen and workers. It also provides incentives to employees for efficient work.
13. Standard costing facilitates management by exception. It helps the management in concentrating its attention on cases which are below the standards set.
14. Standard costing helps in effective delegation of authority and responsibility. As a result, the management can control the affairs of various departments effectively.
15. Setting of standard involves effective utilisation of men, material and machines. It leads to economy and increased productivity in all business activities.
16. It simplifies costing procedures and reporting. It reduces clerical work since standard rates are fixed for material pricing, overhead allocation apportionment, etc.
17. It makes the work of valuation of inventory easier. This is because inventory is valued at predetermined costs.

10.5 Limitations of Standard Costing

Standard costing has certain limitations. These are the following:

1. Establishment of standard costs is difficult in practice. Even if the particular type of standard to be used has been properly defined, there is no guarantee that the standard established will have the same tightness or looseness as envisaged throughout the organisation.
2. In course of time, the standards become rigid, it is not always possible to change standards to keep pace with frequent changes in the manufacturing conditions. Frequent revision of standards is costly and creates problems.
3. Standard costing is an expensive technique for a small concern.
4. It is difficult to set accurate standard costs. Improperly set standards may do more harm than good.
5. It is not easy to distinguish variances as controllable or uncontrollable.
6. Since business conditions are changing, the standards are to be revised frequently. Revision of standards is a tedious and costly process.
7. Standard costing cannot be applied fully to job order industries dealing in non-standardised products. It may be applied partially but it would not be effective.
8. If standards are too high or rigid, they will be unattainable. It will adversely affect the morale and motivation of employees and lead to resistance.
9. Inaccurate, unreliable and out-of-date standards do more harm than any good.

10.6 Determination of Standard Cost

As 'standard' is a relative expression; one has to determine for oneself what one deems appropriate as a 'standard'. However, one should not lose sight of the objective, which normally should be avoidance of all losses and wastages as far as possible. The management may certainly fix standards on the basis of maximum possible efficiency, possibly with an assumption of no wastage, no idle time, etc. However, this is not realistic; the standard will be the 'Ideal Standard' but impracticable-no one will even make an attempt to achieve it.

Alternatively, an average of past few years' costs could be taken as basis but this will mean perpetuating past inefficiencies, by making them the target. This will defeat the very purpose of standard costing.

Notes

A target should be such that it will induce the worker to give out his best. In order to make people believe in standards and to induce them towards achieving them, standards should better be such as can be achieved but with an effort; in other words, they should be somewhat idealistic.

1. ***Basic Standard:*** This is a 'standard' which is established for use, unaltered over a long period of time. Standards are fixed scientifically and hence it is more of a technical job. These standards are supposed to remain unchanged so long as quality requirements are constant. Moreover, if forward contracts are entered into regarding materials and labour pact signed for a certain period, the costs can be planned accordingly. Such costs, i.e., basic standards may, however, have to be adjusted for changes in circumstances in a period.

2. ***Current Standard:*** In practice, standards are fixed on the basis of scientific studies but adjusted for current subjective factors. A standard, therefore, is made realistic to reflect the anticipated conditions affecting operations; it is not too idealistic. Such a standard would bring to sharp focus the avoidable causes for variances, leading to control action. A current standard is a standard for a certain period, for certain conditions and for certain circumstances. Basic standards are more idealistic whereas current standards are more realistic. Most companies use current and not basic standards.

3. ***Expected or Attainable Standard:*** A standard though idealistic, should also be realistic. If targets are fixed for a certain budgeted period, taking into account the expected conditions, it can be known as "expected standard" or "attainable standard". It is defined by CIMA, London as, "A standard which can be attained if a standard unit of work is carried out efficiently, a machine properly operated or a material properly used. Allowances are made for normal losses, waste and machine downtime."

4. ***Normal Standard:*** Yet another target is one that is intended to cover a longer period of time— a period long enough to cover one trade cycle, i.e., roughly 7 to 10 years. This is defined as "the average standard which it is anticipated can be attained over a future period of time, preferably, long enough to cover one trade cycle".

5. ***Ideal Standard:*** This standard refers to the target that can be attained under most ideal conditions. Hence, it is more idealistic and less realistic. It is defined by the terminology as: "The standard which can be attained under the most favourable conditions, with no allowance for normal losses waste and machine down time".

10.7 Standard Cost Sheet

When all the standard costs have been determined, a Standard Cost Sheet is prepared for each product or service. The process of setting standards for materials, labour and overheads results in the establishment of the standard cost for the product. Such a cost sheet shows for a specified unit of production, quantity, quality and price of each type of materials to be used, the time and the rate of pay of each type of labour, the various operations the product would pass through, the recovery of overhead and the total cost. The build-up of the standard cost of each item is recorded in standard cost sheet. These details serve as a basis to measure the efficiency against which actual quantities and costs are compared. The type of standard cost sheet varies with the requirements of individual firm hence no uniform format can be prescribed.

10.8 Summary

- Standard costing is a tool, which replaces the bottleneck of the historical costing.
- Historical costing facilitates to ascertain the cost of a product which is connected with yester operations or with past.

Notes

- Standards are classified into two categories, viz. Revenue standards and Cost standards.
- The systems of standard costing and budgetary control have the common objectives of controlling business operations by establishment of pre-determined targets, measuring the actual performances and comparing it with the targets, for the purpose of having better efficiency and of reducing costs.
- Standard costing is a very useful managerial tool for cost control and cost reduction.
- When all the standard costs have been determined, a Standard Cost Sheet is prepared for each product or service. The process of setting standards for materials, labour and overheads results in the establishment of the standard cost for the product.

10.9 Keywords

Budget: Budget is a projection of financial accounts.

Ideal Standard: This standard refers to the target that can be attained under most ideal conditions.

Standard cost: Standard cost is a predetermined cost, which is estimated from management's standard of efficient operation and the relevant necessary expenditure.

10.10 Self Assessment

Fill in the blanks:

1. ..... facilitates to ascertain the cost of a product which is connected with yester operations or with past.
2. Standards are classified into two categories, viz. ..... and Cost standards.
3. ..... is introduced to state in figures an approved plan of action relating to a particular period.
4. Estimated costs are calculated on the basis of ..... adjusted in the light of anticipated changes in the future.
5. Standard costs are used as a regular system of accounts from which ..... are found out.
6. Basic standards are more idealistic whereas current standards are more .....
7. The build-up of the standard cost of each item is recorded in .....

Choose the appropriate answer:

8. Standard is ideally prepared for
   (a) Fixed cost (b) Variable cost
   (c) Sales (d) Variable cost and sales
9. If standard cost of the product is more than the actual cost
   (a) Favourable (b) Neither favourable nor unfavourable
   (c) Unfavourable (d) Both (a) & (c)
10. Standard is calculated for
   (a) Volume (b) Per batch
   (c) Per unit (d) Per batch or unit

Notes

11. Why the given standards are tuned to actual?
    (a) To equate both of them
    (b) To convert the standards at par with the actual performance
    (c) To know the difference
    (d) None of the above

10.11 Review Questions

1. Standard costing is a tool, which replaces the bottleneck of the historical costing. Give some suggestions to support the above statement.
2. The organisations can increase their profit either by increasing the selling price of their products or by reducing the cost of the product. Which strategy is more beneficial for the organisation?
3. Standard is nothing but an expected or anticipated performance in normal situations. Do you think the process of setting the revenue standards is same as the cost standards?
4. The budgetary control and standard costing systems are said to be inter-related but they are not inter-dependent. Discuss.
5. How standard costing is a useful managerial tool for cost control and cost reduction?
6. Prepare a standard cost sheet for any product or service and discuss the key elements.
7. The management may certainly fix standards on the basis of maximum possible efficiency, possibly with an assumption of no wastage, no idle time, etc. Do you think this is realistic?
8. As 'standard' is a relative expression; one has to determine for oneself what one deems appropriate as a 'standard'. Discuss.
9. Suggest some drawbacks of standard costing.
10. Standard costs and estimated costs are predetermined costs, but their objectives are different. What are the key points of differences between standard cost and estimated cost?

Answers: Self Assessment

1.	Historical costing	2.	Revenue standards
3.	Budgetary control	4.	past performance
5.	variances	6.	realistic
7.	standard cost sheet	8.	(d)
9.	(a)	10.	(d)
11.	(b)		

Notes

10.12 Further Readings

Books

B.M. Lall Nigam and I.C. Jain, *Cost Accounting*, Prentice-Hall of India (P) Ltd.

Hilton, Maher and Selto, *Cost Management*, 2nd Edition, Tata McGraw-Hill Publishing Company Ltd.

M.N. Arora, *Cost and Management Accounting*, 8th Edition, Vikas Publishing House (P) Ltd.

M.P. Pandikumar, *Management Accounting*, Excel Books.

Online links

www.allinterview.com

www.authorstream.com

Unit 11: Variance Analysis

Notes

CONTENTS

Objectives

Introduction

11.1 Classification of Variances

11.2 Material Variances

11.2.1 Material Cost Variance (MCV)

11.2.2 Material Price Variance

11.2.3 Material Usage or Quantity Variance

11.2.4 Material Sub-usage Variance

11.2.5 Material Yield Variance

11.3 Labour Variance

11.3.1 Labour Cost Variance

11.3.2 Labour Rate or Wage Pay Variance

11.3.3 Labour Efficiency Variance

11.3.4 Idle Time Variance

11.3.5 Labour Mix Variance

11.3.6 Labour Sub-efficiency Variance

11.3.7 Labour Yield Variance

11.4 Overhead Variances

11.5 Sales Variance

11.5.1 Sales Values Variance

11.5.2 Sales Price Variance

11.5.3 Sales Volume Variance

11.6 Summary

11.7 Keywords

11.8 Self Assessment

11.9 Review Questions

11.10 Further Readings

Objectives

After studying this unit, you will be able to:

- Compute cost variance like material cost, labour cost and one hour cost
- Determine revenue variance like sales variance

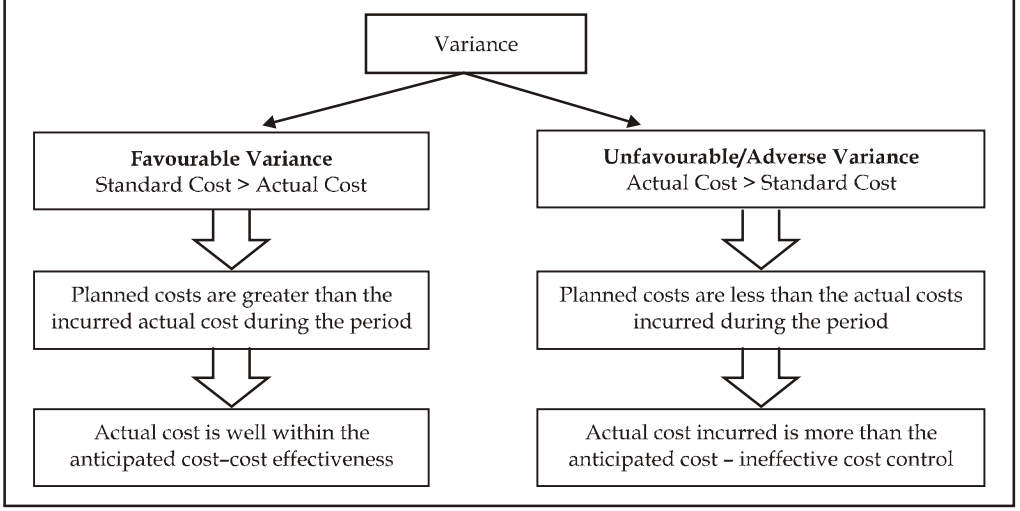
Notes

Introduction

The term "Variance" means deviation, difference and so on. The variance in accordance with standard costing is meant as the difference/deviation in between two different costs viz standard cost and actual cost. According to ICWA, London defines the variance as "deviation in between the standard cost and comparable actual cost incurred during the period."

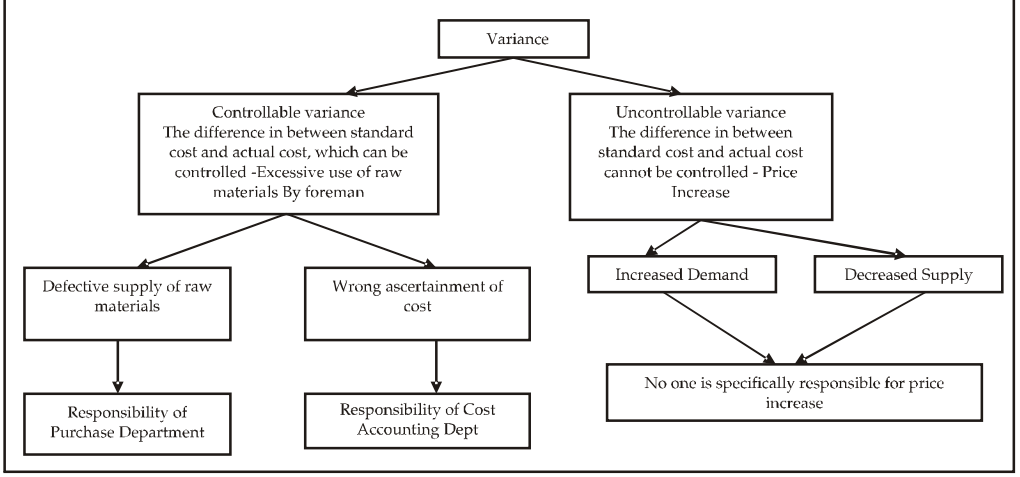
The variance of the specific element of cost should be periodically checked. The variance is classified into two categories.

Figure 11.1



The variance can be classified into two categories, based on controllability *viz.* controllable and uncontrollable variance.

Figure 11.2



The purpose of standard costing is to correct the variance, which is in between standard cost and actual cost.

Notes

11.1 Classification of Variances

There are two types of variances *viz.* cost variance and revenue variance.

Cost Variance: Cost variance can be further classified into three categories:

1. Material Cost Variance
2. Labour Cost Variance
3. Overhead Variance

Revenue Variance:

1. Sales Variance

Apart from the above classified types, there is a general way of studying variances. Let us discuss every variance in detail in the remaining unit.

11.2 Material Variances

11.2.1 Material Cost Variance (MCV)

The name of the variance is self-explanatory, means that the difference in between the standard cost of materials and Actual cost of materials. The material cost variance is in between the standard material cost for actual production in units and actual cost.

Material cost variance can be computed into two different ways:

1. ***Direct Method:*** It is a method simply studies the deviation in between the two different cost of materials without giving any emphasis for other factors of influence *viz.* the quantity of materials and price of a material. Under the direct method, the comparison is in between the standard cost of materials which is the planned cost of materials before commencement, scientifically developed by considering the all other factors of influence and the actual cost of materials, which is actually incurred during the production.

   Why standard cost is to be tuned to the level of actual cost?

   The main aim of computing the standard cost for actual output is that the standard cost developed is not to the tune of actual production in units, instead it is available in terms of per unit of a product/for overall production e.g. for a year. To have leveled comparison in between the standard cost has to be designed to the tune of Actual cost.

   Material cost variance = Standard cost of materials for actual output — Actual cost of raw materials

   = (SQAO × SP) – (AQ×AP)

2. ***Indirect method:*** It is a method which computes the material cost variance by considering two important variances *viz.* material price variance and material usage variance. Under this method material cost variance is calculated through the summation of the variances *viz.* price and usage of materials.

   Material Cost Variance = Material Price Variance (MPV) + Material Usage Variance

Example: To manufacture one unit of product, the requirement is 2 Kgs of material @ ₹2 per Kg. Actual output is 400 units Actual quantity of materials used is 850 kgs ₹ 1.80 find out the material cost variance.

Notes

Solution:

First step is to find out the standard quantity for actual output

Standard quantity of raw materials = 2Kg

Actual Production = 400 units

To have leveled comparison, the Standard quantity of materials for actual output to computed; then only the variance intend to encircle will be meaningful or vice-versa.

The computation of SQAO should be computed at first:

For the production of one unit of product 2 Kg of raw material was planned and finalized prior to the commencement of production process. The actual production of the firm during the cycle is 400 units. What would be the requirement of the firm in manufacturing 400 units to the tune of planned quantity of materials per unit 2 Kg? This is the standard quantity of materials for actual output computed for an effective comparison with the actual quantity of materials consumed by the firm in manufacturing the 400 units.

$$\begin{aligned}
\text{SQAO} &= 400 \times 2\text{Kg} = 800 \text{ Kg} \\
\text{SP = Standard Price} &= ₹2 \text{ per Kg} \\
\text{AQ = Actual Quantity} &= 850 \text{ Kgs} \\
\text{AP = Actual Price} &= ₹1.80 \\
\text{Material Cost Variance} &= (\text{SQAO} \times \text{SP}) - (\text{AQ} \times \text{AP}) \\
&= (800 \text{ Kg} \times ₹2) - (850 \text{ Kg} \times ₹1.8) \\
&= ₹1600 - ₹1530 \\
&= ₹70 \text{ (F)}
\end{aligned}$$

The material cost variance of the above problem is favourable due to lesser actual cost over the standard cost of materials.

11.2.2 Material Price Variance

It is very simple to understand that the name of the variance is self-explanatory in explaining the meaning of the variance. It is a variance in between two different prices *viz.* the standard price and actual price of raw materials. The difference should be expressed only in terms of the actual usage of materials. The ultimate of aim of expressing this variance in the lights of actual usage of materials is to identify the deviation of the price changes in line with the purchase of raw materials.

$$\text{Material Price Variance} = (\text{SP} - \text{AP})\ \text{AQ}$$

From the earlier illustration, the material price variance is as follows

$$\begin{aligned}
\text{Standard price} &= ₹\ 2 \text{ per unit} \\
\text{Actual price} &= ₹\ 1.80 \text{ per unit} \\
\text{Actual quantity of materials consumed} &= 850 \text{ Kg} \\
\text{Material price variance} &= 850 \text{ Kg } (2.00 - 1.80) \\
\text{Material price variance} &= ₹170 \text{ (F)}
\end{aligned}$$

Decision criterion: If the resultant is positive, it means that the planned price which was scientifically developed is more than the actual price. In precise terms, the price fluctuations in

Notes

the market are well with in the planned price. If it is within the standard, quantified as favourable for a firm. If not, otherwise, the excessive/exorbitant cost of purchase of raw material more than the standard is unfavourable/adverse for the firm, the reason is the firm has paid more on the cost towards the purchase of materials than the planned one.

11.2.3 Material Usage or Quantity Variance

The variance/deviation is in between the standard quantity of materials and the actual quantity of materials consumed. The found variance in Kg of raw materials should be expressed in monetary values i.e in terms of Rupees, through the multiplication with the standard price. The ultimate aim of expressing the variance in terms of standard price is the price, which is totally free from market fluctuations i.e. supply and demand factors of the market.

Materials Usage Variance = Standard Price × (Standard quantity of materials for actual output – Actual quantity of materials used)

Example: (Output more than one unit)

Standard quantity of raw materials required to produce one unit of X was 10 kgs @ ₹6 per Kg

Actual units produced during that period was 500 units. Actual quantity of materials was 5500 Kgs @ ₹ 5.5 Kg.

Calculate the material cost, price and usage variance.

Solution:

From the above problem, it came to understand that the actual production of a firm is more than a unit i.e. 500 units.

Standard quantity of raw materials for actual output has to be computed to the tune of actual production 500 units

Standard quantity of raw materials foe actual output = Standard Quantity of Materials × Acutal Production

For One unit of out put the standard quantity of raw material is 10 Kg

For 500 units of actual production, how much would be the standard quantity of raw materials?

SQAO = 10 Kg × 500 Units = 5000 Kg,

Standard Price = ₹ 6 Kg

AQ = 5500 Kgs, Actual Price = ₹5.5 Kg

Material Cost Variance = SQAO × SP – AQ × AP

= (5000 Kg × ₹6) – (5500 Kg × ₹5.5)

= (₹30000) – (₹30250) = (₹250))(A)

Material Price Variance = (SP – AP) × AQ

= (₹6 – ₹5.5) × 5500 = ₹2750(F)

Material Usage Variance = (SQAO – AQ)×SP

= (5000 – 5500)× ₹6= ₹3000 (A)

Notes

Verification: The indirect method of computing the material cost variance facilitates to verify the answer computed under the material variances.

MCV = MPV + MUV

₹250 (A) = ₹ 2750 (F)+₹ 3000 (A)

L.H.S = R.H.S

Task If the closing stock of raw materials is given, how the material variance can be computed?

Standard quantity of materials = 5000 Kgs @ ₹5 per Kg

Actual quantity of materials purchased = 5500 Kgs @ ₹6 per Kg

Closing stock of raw materials = 300 Kgs

Material Mix Variance

This kind of variance arises only due to the mixture of various raw materials to produce and to get an output. Normally the process of production involves more than two materials to get the output. For example, the firm mixes the raw materials of A& B at the ratio of 3:2. The mixture is called Material Mix.

The above mentioned ratio is being changed by the firm for actual production in producing a unit of product as 4:1.

The change in the material mix due to various reasons, those are following:

1. In adequate supply of raw materials
2. Price factor of a material
3. Introduction of a new system of production due to expansion
4. Substitution of a material due better quality and cheaper price than the existing material in current system of procurement.

This material mix variance is highly applicable in the following industries that chemicals, fertilizers, pharmaceuticals, consumables, etc.

The variance should be computed in between two different materials *viz.* Standard quantity of materials and Actual quantity of materials.

Actual quantity of materials is the volume of materials registered the change in the usage of raw materials mixture but the standard quantity of raw materials is totally free from the change of mixture in the raw materials.

While studying the variance, the factors of comparison should be weighed equally with each other. For instance, the standard quantity of material should not be a rational factor of comparison with actual.

Caution In order to have an appropriate comparison, the standard has to be revised.

The early estimated standard is the measure not considered the reality during the production process due to changes occurred in the procurement of raw materials. While

Notes

comparing the standard with actual, the earlier is not at par with later in terms of realities. To incorporate the realities, the standards are tuned towards the actual; makes the comparison meaningful in studying the variance among the both.

When the total standard quantity of materials is equivalent to Actual quantity of materials: From the below example, the ultimate aim of revising the standard is explained as follows:

Example: Before the commencement of production process, the standard mix of materials for the production of one unit of output included two different mixture of quantities of material *viz.* A&B amounted 70 tons and 30 tons respectively; which formed the 70% and 30% in the production of a unit of out put with the current system of material procurement.

Due to shortage of material A, the firm is required to redesign the material procurement system to have an uninterrupted flow of production of one unit of product. In order to meet out the shortage of raw material A, the firm should replace the shortage only against the adequate supply of material B from the market. The firm should restructure the procurement system of material as follows i.e. 60% of material A and 40% material B. The restructurisation is done only on the actual but not on the standard. While studying the variance analysis in between the quantity of materials, standard of 70% of A and 30% of B should be tuned towards the actual 60% of A and 40% of B procured during the process.

Standard Quantity of Materials		Actual Quantity of Materials	
Material A	70 tons	Material A	60 tons
Material B	30 tons	Material B	40 tons

Revised standard quantity of material

$$\text{Actual Material} = \frac{\text{Standard quantity of Material A/B} \times \text{Total Quantity}}{\text{Total Quantity of Standard Material}}$$

For A = 70/100 × 100 = 70 tons

For B = 30/100 × 100 = 30 tons

Revised Quantity of Material
Revised quantity of Material A = 70 Tons
Revised quantity of Material B = 30 Tons

From the above, if the total quantity of standard materials is equivalent to actual quantity of materials, the revised quantity of materials will be as same as the standard quantity of materials.

When the total standard quantity of materials is not equivalent to total actual quantity of materials consumed: If the Standard quantity of materials of X and Y are 60 tons and 40 tons respectively. The actual quantity of materials 90 tons and 60 tons. The total standard quantity of materials and actual quantity of materials amounted 100 tons and 150 tons respectively.

The revised standard mix of materials of X and Y are as follows:

$$X = \frac{60}{100} \times 150 = 90 \text{ tons}$$

$$Y = \frac{40}{100} \times 150 = 60 \text{ tons}$$

Material Mix Variance = Standard Price (Revised Standard Quantity – Actual Quantity)

Notes

From the early discussions, it is clearly understood that the revised standard mix of materials will be the same only during the moment at which the total actual and standard quantity of materials are equivalent to each other and vice-versa.

Example: From the following information, calculate the materials mix variance

Materials	Standard	Actuals
A	200 Units @ ₹12	160 Units @ ₹13
B	100 Units @ ₹10	140 Units @ ₹10

Due to shortage of material, it was decided to reduce the consumption of A by 15% and increase that of material B by 30%.

The above problem does not have any difference in between the total actual quantity and standard quantity of materials. In both the cases the total quantity of materials are equivalent to 300 units. If both are equivalent to each other, the standard mix would be the revised standard mix of the materials.

Solution:

Revised Standard Mix:

Material A = $\frac{200}{300}$ × 300 Units = 200 units

Material B = $\frac{100}{300}$ × 300 Units = 100 units

After finding out the revised standard mix of the materials, the changes on the consumption should be incorporated due to the shortage of materials to the tune of actual quantity of materials.

For material A, there is reduction in the actual consumption in the quantity of materials amounted 15%.

For material B, there is spurt increase in the consumption of material B due to fill up the shortage of material A i.e 30% increase on material B.

Final Revised standard Mix of Material A : 200 units – 15% of 200 units = 170 units

B : 100 units + 30% of 100 units = 130 units

Material Mix Variance

Material Mix Variance = Standard Price (Revised Standard Quantity – Actual Quantity)

MMV Material A = ₹12 (170 units – 160 units) = ₹120 Favourable

MMV Material B = ₹10 (130 units – 140 units) = ₹100 Adverse

Total Material Mix Variance = ₹ 20 Favourable.

Notes The material mix variance is one of the components of material usage variance.

Notes

11.2.4 Material Sub-usage Variance

This is the variance in between standard quantity and revised standard quantity of materials denominated in terms of standard price. The purpose of studying the difference in between these two is to analyse the amount of deviation of the standard against the revised standard in line with the actual fluctuation in the quantity of materials consumption during the production process. It is the only variance highlights the difference in between the early set standard and the redesigned standard in terms of actual quantity of materials for meaningful comparison.

Material Sub-usage Variance = Standard Cost per unit (Standard Quantity – Revised Standard Quantity).

If the total actual quantity of materials consumption in units is equivalent to the total standard quantity of materials, nullifies the material sub-usage variance in between the standard quantity of materials and revised standard quantity of materials. It means that the standard quantity of materials of the mix will be the revised standard quantity of materials. If both are equivalent to each other, the variance is equivalent to zero in terms of standard price/cost per unit.

Example: Find out the material sub-usage variance from the following:

Materials	Standard	Materials	Actuals
A	60 Kgs @ ₹10	A	70Kgs @ ₹10
B	40 Kgs @ ₹12	B	50Kgs @ ₹14
	100		120

Solution:

Revised Standard quantity of Materials:

$$A : \frac{60\text{kgs}}{100\text{kgs}} \times 120 \text{ Kgs} = 72 \text{ Kgs}$$

$$B : \frac{40\text{kgs}}{100\text{kgs}} \times 120 \text{ Kgs} = 48 \text{ Kgs}$$

Material Sub-usage Variance = Standard Price/Cost per unit (Standard Production for Actual Output – Revised Standard Quantity)

Material A= ₹10 (60 Kgs – 72 Kgs) = ₹120 (Adverse)

Material B = ₹12 (40 Kgs – 48 Kgs) = ₹96 (Adverse)

Material Sub-usage Variance = ₹216 (Adverse)

From the above example, it is obviously understood that the early set standard is less than the revised standard quantity of materials due to change in the materials mix consumption i.e unexpectedly to replace one material with the another due to shortage any one of the materials in the mix. The greater the revised standard quantity of materials means that greater the volatility in the actual consumption of materials. If the variance is adverse, means that the standard which was initially set for comparison has not incorporated the fluctuations in the actual; being less than the revised standard which is an index of actual.

This material sub-usage variance is one of the components of the materials usage variance.

Material Usage Variance = Material Sub-usage Variance + Material Mix Variance

Notes

11.2.5 Material Yield Variance

It is one of the components of the material usage variance which arises only due to the deviation in between the standard yield determined and the actual yield accrued. This variance highlights either the abnormal loss of materials or saving of materials. This variance plays most important role in the process industries, to assess the loss/wastage of materials. If the actual loss of materials is different from the standard loss of materials will result the variance in two different situations.

When the standard and actual do not differ from each other:

In this case, the yield variance is calculated as follows

Yield Variance = Standard Rate/Cost per unit (Actual Yield – Standard Yield)

Standard Rate has to be calculated from the following.

$$\text{Standard Rate} = \frac{\text{Standard cost of Standard Mix}}{\text{Net Standard Output (Gross Standard Output – Standard Loss)}}$$

When the actual mix differs from the standard mix: In the second case, standard mix has to be tuned to the requirement of actual mix, which is revised standard mix, realistic in sense for meaningful comparison, to highlight the deviation in between two different yields *viz.* actual yield and revised standard yield. The standard rate has to be calculated only for the revised standard mix of materials.

$$\text{Standard Rate} = \frac{\text{Standard Cost of Revised Standard Mix}}{\text{Net Standard Mix/Output (Gross Standard Output – Standard Loss)}}$$

Calculate Material Yield Variance

Example: The total standard mix is equivalent to total actual mix

Particulars	Standard		Actual	
	Qty in Kg	Price	Qty in Kg	Price
Material A	90	6	60	5
Material B	60	8	90	9
	150		**150**	

Normal loss is allowed 10% Actual output 130 units.

Revised standard output has to be computed. In this problem, the total mixes are equivalent to each other, but, the normal loss is a loss 10% expected on the normal output. Though, this problem does not have the difference between the mixes, the revised standard mix should have to be computed to register the expected loss (normal loss) on the standard output.

Revised standard mix = Standard Mix – Normal Loss (Expected Loss)

= 150 Kgs – 10% on 150 Kgs = 135 Kgs

The next step is to find out the standard rate/price

Standard price per unit

$$= \frac{\text{Standard Cost/Price of Standard Mix}}{\text{Net Standard Mix/Output (Gross Standard Output – Standard Loss)}}$$

Notes

$$= \frac{(90 \text{ kgs} \times ₹\ 6) + (60 \text{ kgs} \times ₹\ 8)}{135} = \frac{₹\ 540 + ₹\ 480}{135} = \frac{1020}{135} = ₹7.55/-$$

Material Yield Variance = Standard Price (Actual Yield – Revised Standard Yield)

= ₹7.55 (130 Units – 135 Units) = ₹7.55 (–5 Units)

= ₹37.55 (Adverse)

11.3 Labour Variance

Labour Variance is known in other words as Labour Cost Variance. The cost of the labour is usually denominated by the wages paid/incurred during the production. Labour Variance Analysis, is studying the deviation in between the actual cost of the labour incurred and standard/budgeted cost of the labour. This is another most important cost variance, next to material cost variance, which considers the rate of the wage per hour for the computation of the total standard cost of labour and actual cost of labour like price of the materials per kg.

11.3.1 Labour Cost Variance

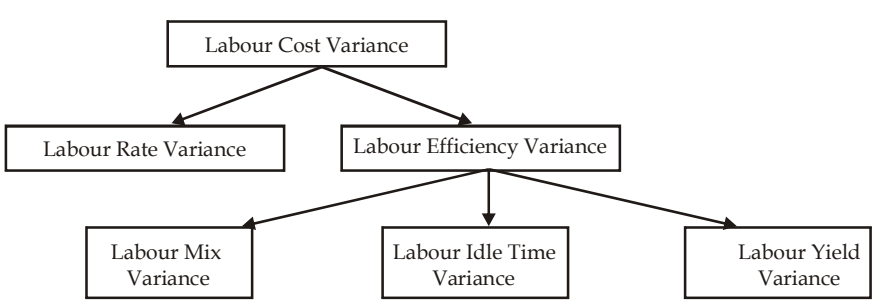
Labour cost variance is the tool studies the deviation in between the total standard cost of the labour and actual cost of labour. The actual labour cost may vary due to many reasons from the planned i.e standard.

Causes for the variance:

1. The hourly rate of the labour may vary due to demand and supply of the labour force.
2. The hourly rate of the labour may vary due to nature of the labour required i.e. Skilled/Semi-Skilled/Unskilled. The rate differs from one category to another due to efficiency of the labours.
3. The Labour cost variance is in relevance with the time component of the job. The time required to complete the job may vary due to too many reasons; more specifically time wastage results in the production.

The following is the structure of the labour cost variance, which will illustrate the various components of the labour variance.

Figure 11.3



Labour Cost Variance = Standard Cost of the Labour* – Actual Cost of Labour**

*Standard Cost of the Labour = Standard Hours for Actual Output × Standard Hour Wage Rate

**Actual Cost of the Labour = Actual Hours taken for production × Actual Hour Wage Rate

Notes

11.3.2 Labour Rate or Wage Pay Variance

This is the variance, resultant, due to the change in the wage rate. The Labour rate variance is the difference between standard wage rate, which already determined and the actual wage rate incurred during the production. The variance should be denominated in terms of the actual hours of production.

The actual hours taken is into consideration only for reality, that is the time moments consumed by the production process. This expression facilitates to understand the excessive/lesser amount spent on the labour, which depicts, how much was over/under spent by the firm for the payment of wages than the planned during the production?

The causes of labour wage rate or pay variance:

1. It is due to changes occurred in the structure of basic wages.
2. The ratio of the labour mix is varied due to the nature of the order. Undertaken by the firm to meet the needs of the consumers. The special order from the buyer may require the goldsmith to take more special care in the design of an ornament than the regular or routine design. This leads to involvement of more amount of skilled labour, which finally escalates/increases the cost of the labour.
3. To fulfill the immediate and excessive orders of the consumers which are to be supplied to their requirements leads to greater payment of wages through over time charges; which is normally greater than the regular wage rate.
4. This variance mainly occurs in the industry, which is connected with seasonal business. This variance mainly plays pivotal role in the industries of soft drinks, fans, refrigerator, fertilizer, crackers and so on.

The Labour Rate Variance (LRV) = Actual hours taken (Standard Rate – Actual Rate)

11.3.3 Labour Efficiency Variance

The efficiency of the labour is denominated only in actual hours for actual output, which should be less than the standard hours expected to perform during the job. The labour efficiency variance is the deviation in between two standard hours for actual output and actual hours taken for actual output. The expression of variance in terms of hours should be expressed in terms of wage rate i.e. standard wage rate.

Why the expression should be in the standard wage rate?

The aim of expressing Efficiency variance in terms of standard wage is to express them in monetary units and should be free from the demand and supply forces of the labour force which directly has an impact on the basic labour wage rate

Labour Efficiency Variance = Standard Rate (Standard Hours for Actual Output – Actual Hours for Actual Output)

What are causes of this variance?

1. Due to poor working conditions, the efficiency of the working force to complete the job is coming down.
2. Quality of maintenance of the machinery is facilitating the working force to maintain the efficiency.

Notes

3. Frequent change in the quality of materials may lead change in the hours required to complete the work.
4. Poor personnel relations of the workers.

11.3.4 Idle Time Variance

The wages which are paid for unproductive hours to the labourers are known as idle time. The idle time may be classified into two categories:

1. Normal idle time
2. Abnormal idle time

What is normal idle time?

This idle time is known as authorised idle time, which can be understood in other words as unavoidable idle time. Normally the worker is paid for that time during which he does not produce anything.

Time taken by the employees to change the dress.

Time take by the employees to ease themselves during the hours of production i.e going to the toilet for easing and for refreshment going to the canteen.

The employees are paid during the above-enlisted occasions at when they do not produce anything.

In between two different shifts, the production of finished goods do not normally take place due to change over the control from one employee to another.

What is meant by abnormal idle time?

This is known as avoidable idle time; during which the workers are paid for nil production. This type of idle time could be slashed down or downsized through an effective planning. This idle time is the resultant of too many ineffective schedules e.g inadequate supply of raw materials, power shortage/failure, breakdown of machinery and so on. The aforementioned could be easily sorted out through proper planning and scheduling; which will automatically reduce the unproductive time of labour force. Whatever the payment of wages to the working force during the idle time are to be considered as adverse. It means that the firm makes the payment of wages to the labourers/working force without any production/productivity.

Idle Time Variance = Idle hours × Standard Rate (Always "A")

11.3.5 Labour Mix Variance

This variance arises due to deviations in between the actual mixture of labour force for the job and standard mixture of labour force planned to complete the job. The mixture of work force is considered to be most important for completion. Normally, the mixture is in tri colours *viz.* Skilled, Semi-Skilled and Unskilled. The standards are prepared by considering the requirements of the job to be completed. For completing the job, 5 skilled, 3 semi-skilled and 2 unskilled employees are required. Due to non-availability of skilled labour force, the firm is required to carry out the operations without any lacuna through the induction of more semi-skilled labour force. The actual composition of the labour force is 2 skilled, 6 semi-skilled and 2 unskilled which finally led to labour mix variance.

Notes

Reasons for the labour mix variance:

1. Absenteeism
2. Labour turnover
3. Non-availability of required labour force from the business environment.

The above critical factors directly influence the efficiency of the labour force.

Labour Mix Variance = Standard Rate (Revised Standard Hours – Actual Hours)

Standard hours for the job were determined for the Standard mixture of labour force but these hours are not denominated to the tune of actual hours taken by the actual mixture of labours force. To study the variance in between them, the standard hours should be in line with the actual. The standard hours which are converted to the tune of actual hours is known as Revised standard hours considered to be level platform for an effective comparison.

Labour Mix Variance = Standard Rate (Revised Standard Hours – Actual Hours)

11.3.6 Labour Sub-efficiency Variance

It is one of the components of the labour efficiency variance.

Labour Sub-efficiency Variance = Standard Rate (Standard Hours for Actual Output – Revised Standard Hours)

11.3.7 Labour Yield Variance

It is considered to be as one of the components of labour efficiency variance. This is a variance in between two different outputs of the enterprise *viz.* standard output for actual hours and actual output.

This is a variance facilitates to study the deviation in between two different levels i.e. how many number of outputs would be produced during the actual hours and how many number of actual outputs were produced during the actual hours.

Labour Yield Variance = Standard Cost per unit (Actual Output – Standard Output in Actual Hours)

OR

= Standard Cost per unit (Actual Yield in Units – Standard Yield in Actual Hours)

If Actual output or Actual yield in units is greater than the standard yield in actual hours, it means that the firm's actual production in units is greater than the standard estimates nothing but favourable to the business enterprise.

Example: The standard and actual data of a manufacturing concern are given:

Standard time	2,000 Hrs
Standard rate per hour	₹ 2
Actual time taken	1,900 Hrs
Actual wages paid per hour	₹ 2.50

Calculate labour variances.

Notes

Solution:

First step is to compute the labour cost variance

= (Standard Hrs for Actual Output × Standard Rate) – (Actual Hours × Actual Rate)

= (2,000 Hrs × ₹ 2) – (1,900 Hrs × ₹ 2.50)

= ₹ 4,000 – ₹ 4,750

= ₹ 750 (Adverse)

The next step is to find out the labour rate variance

= Actual Hours (Standard Rate – Actual Rate)

= 1,900 Hours (2 – 2.50) = ₹ 950 (Adverse)

The next variance is to be found out the labour efficiency variance

= Standard Rate (Standard Hours for Actual Output – Acutal Hours)

= ₹ 2.00 (2,000 – 1,900) = ₹ 200 (Favourable)

Verification

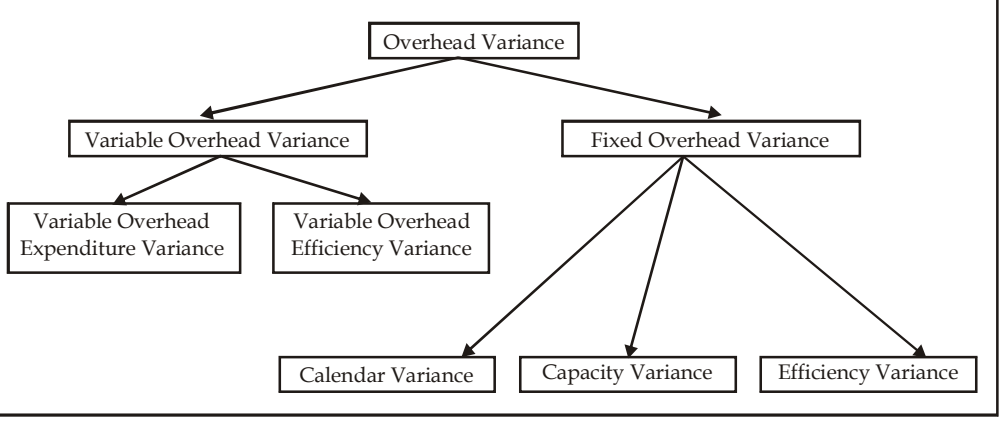
Labour Cost Variance = Labour Rate Variance + Labour Efficiency Variance

750 (Adverse) = ₹ 950 (Adverse) + ₹ 200 (Favourable)

750 (Adverse) = ₹ 750 (Adverse)

11.4 Overhead Variances

Figure 11.4



In general, the overhead variance is defined is as the variance in between standard cost of overhead estimated for the actual output and actual cost of overhead really incurred.

With reference to absorption overheads, the variance occurs only during either over or under absorption of overheads.

Under absorption of overheads means that the standard cost of the overhead is more than that of the incurred actual overhead. In brief, it is a favourable situation as far as the firm concerned and vice versa in the case of over absorption of overheads.

Notes

1. ***Variable overhead cost variance:*** It is the variance or deviation in between the standard variable overhead for actual production of units and Actual overhead incurred.

   = Standard variable overhead rate per unit × Actual output – Actual variable overheads incurred

2. ***Variable overhead expenditure variance:*** This is the variance in between the two different rates of variable overheads *viz.* standard rate and actual rate; denominated in terms of Actual hours taken consumed by the firm.

   = Actual Hours (Standard Rate – Actual Rate)

3. ***Variable overhead efficiency variance:*** It is another variance which is in between the standard hours for actual output and actual hours consumed during the production; denominated in terms of standard rate.

   = Standard Rate (Standard Hours for Actual Output – Actual Hours)

4. ***Fixed overhead cost variance:*** The most important variance is overhead cost variance

   = Standard Overhead Cost for Actual Output – Actual Overheads

   The second important variance is Budgeted or Expenditure variance

   = Budgeted Overheads – Actual Overheads

   What is the difference in between the budgeted figures and standards?

   Budgeted figures are not adjusted to the actual but the standards could be adjusted or tuned towards the actual.

   The next important variance is overhead volume variance

   (a) If the standard overhead rate per unit is given

   = Standard Rate per Unit (Actual Production – Budgeted Production)

   (b) If the standard overhead rate per hour is given

   = Standard Rate per Hour (Standard Hours for Actual Production – Budgeted Production)

   The next important variance is overhead efficiency variance

   (a) If the standard rate per unit is given

   = Standard Overhead Rate per Unit (Actual Production – Standard Production in Actual Hours)

   (b) If the standard rate per hour is given

   = Standard Overhead Rate per Hour (Actual Hours – Standard Hours for Actual Production)

   The last as well as most important variance

   (a) If the standard rate per unit is given

   = Standard Rate per Unit (Standard Production – Actual Production)

   (b) When standard rate per hour is given

   = Standard Rate per Unit (Actual Hours – Budgeted Hours of Production)

Notes

Example: Standard hours = 6 per unit

Standard cost = ₹4 per hour

Actual hours taken = 640 hours

Actual production = 100 units

Actual overheads = ₹ 2,500

The first step is to determine the variable overhead cost variance

= Standard Variable Overhead Cost – Actual Variable Overhead Incurred

The next step is to find out the standard variable overhead cost for actual production

= Standard Hours per Unit × Standard Cost × Actual Production

= .6 per unit × ₹4 per hour × 100 units= ₹ 2,400

The next step is to determine the variance

= ₹ 2,400 – ₹ 2,500 = ₹ 100 (Adverse)

The next one is Expenditure variance

= Actual Hours (Standard Rate – Actual Rate)

The first step is to determine the actual hourly rate of the variable overheads

$$= \text{Actual Hourly Rate of Variable Overheads} = \frac{\text{Total Actual Overheads}}{\text{Actual Hours Taken}} = \frac{₹\ 2,500}{640\ \text{Hours}} = ₹\ 3.91$$

= 640 Hours (₹ 4 per unit – ₹ 3.9 per unit) = ₹ 64 (Favourable)

The next variance is to find out that variable overhead efficiency variance

= Standard Rate (Standard Hours for Actual Output – Actual Hours)

The next step is to find out the standard hours for actual output

= Standard Hours × Actual Output = 6 hours per unit × 100 Units = 600 Hours

= ₹ 4 (600 Hours – 640 Hours) = ₹ 160 (Adverse)

Example: Budgeted hours for month of Mar. 2004, 180 units

Standard rate of article produced per hour 50 units

Budgeted fixed overheads ₹ 2,700

Actual production March 2004; 9,200 units

Actual hours for production 175 hours

Actual fixed overheads ₹ 2,800

Calculate overhead cost variance, overhead budget variance, overhead volume variance, overhead efficiency variance and overhead capacity variance.

Solution:

The first one to determine the overhead cost variance

= Standard Overhead Cost – Actual Overhead Cost

Notes

The standard overhead cost is to be found out

Standard overhead cost for actual production has to be computed from the below given formula

= Standard Rate per Unit × Actual Production in Units

First step is to determine the standard rate per unit =

$$\frac{\text{Budgeted Fixed Overheads}}{\text{Budgeted Hours} \times \text{Standard Rate of Article Produced per hour}}$$

$$= \frac{₹\ 2{,}700}{180 \times 50} = .3 \text{ paise}$$

The next one is to find out the overhead cost

= 9,200 units × .30 paise = ₹ 2,760

Overhead Cost Variance = ₹ 2,760 – ₹ 2,800 = ₹ 40 (Adverse)

Overhead Budget Variance = Budgeted Overhead – Actual Overhead

= ₹ 2,700 – ₹ 2,800 = ₹ 100 (Adverse)

Overhead Volume Variance = Standard Overhead – Budgeted Overhead

= ₹ 2,760 – ₹ 2,700 = ₹ 60 (Favourable)

The overhead efficiency variance could be calculated in two different ways.

The efficiency is expressed in terms of hours and units. If the firm is able to produce the goods or articles in lesser hours of duration, known as more efficient in time management than the standard.

Likewise, the efficiency could be denominated in terms of units of production. If the actual production is more than that of the standard production in units, the firm is favourable in position in producing the articles than the standard.

Overhead Efficiency Variance = (Actual Production in Units – Standard Production in Units) × Standard Rate

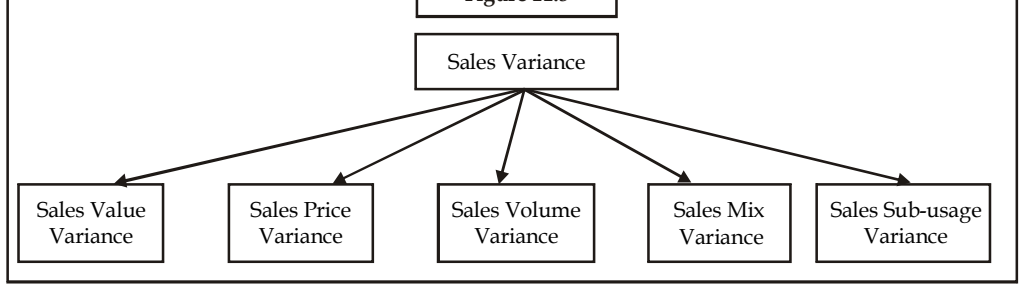
= (9,200 units – 8,750 units) .30 = 450 units .30 = 135 (Favourable)

11.5 Sales Variance

Sales variances is the only component accompanied the profit volume variance of the business transaction. The sales variances are computed and analysed in order to study the effect of sales value and facilitates the sales manager to easily understand the various sales efforts taken by the team.

The sales variance can be classified into various categories. They are as follows:

Figure 11.5



Notes

11.5.1 Sales Values Variance

The name of the variance is self explanatory in explaining the meaning of the variance, that is difference in between the actual value of sales and standard value of sales.

The causes/influences of sales value variance are many more and some of them highlighted for easy understanding about overall picture.

1. The fluctuation in the selling price may lead to variance with the standard selling price — Selling Price Variance.
2. The fluctuation in the actual volume of sales may be due to various factors, mainly the preference of the buyers over the standard/budgeted volume of sales — Sales Volume Variance.
3. Actual mix of various varieties may differ from the standard mix, which leads — Sales mix variance
4. Revised standard sales quantity may be varied from the budgeted sales quantity — Sales quantity/Sub-usage variance

   Sales Value Variance = Actual Value of Sales – Standard Value of Sales

The decision criterion is that more the actual sales volume leads to greater and better the position of the firm than the budgeted sales volume, which leads to favourable position for the firm and vice versa.

11.5.2 Sales Price Variance

It is one of the components as well as influences of the sales variances. It is the variance in between two different prices *viz.* actual price and standard price of the products.

The variance can be computed as follows:

Sales Price Variance = Actual Quantity sold (Actual Price – Standard Price)

The price variance should be finally expressed in terms of the actual number of goods sold. The main aim of expressing them in actual quantity of goods sold is to express the variance in terms of actual performance in units.

The price variation may be due to many reasons

1. The price variance may be due to changes taken place in the structure of competition. The nature of competition changes due to market potential for example monopoly to duopoly; duopoly to perfect competition and so on; leads to change in the structure of pricing in order to retain the consumer base in line with the business.
2. The price variance may be due to two courses of action, which are as follows:

   (a) Cost effectiveness strategy and (b) Distinctiveness Strategy.

11.5.3 Sales Volume Variance

It is one of the elements of sales variance, which is in between the actual sales quantity and budgeted sales quantity. The variance is normally expressed in terms of price i.e. standard price. The purpose of expressing the variance in terms of standard price is that price which is free from market forces.

Sales Volume Variance = Standard Price (Actual Quantity of Sale – Standard Quantity of Sales)

Notes

The sales volume variance can be divided into two different streams that sales mix variance and sales quantity variance/sub-usage variance.

1. ***Sales Mix Variance:*** It is the difference in between the actual sales and standard sales mix. This variance will arise only due to change in the proportion of goods sold. This is a most important variance usually computed/calculated, at the moment, the firm which deals more than one commodity.

   If both, the standard and actual mixes are equivalent to each other, there will not be any mix variance in between the above mentioned.

   If the mixes are totally different from each other, the sales mix variance is to be computed, through the development of revised standard mix of quantities with reference to actual quantities sold, then only the comparison will be meaningful to study the variances occurred in between above mentioned. The sales mix variance is expressed in between two different quantities and finally should be denominated in terms of standard price. The reason for the expression in terms of standard price is the price which is totally free from the demand and supply forces of the market.

   Sales Mix Variance = Standard Price (Actual Quantity – Revised Standard Quantity)

2. ***Sale Sub-usage variance:*** It is another component of usage variance, which expresses the deviation in between the revised standard quantity to the tune of actual quantities sold and the early set standard quantities expected to sell.

   This variance also elucidates the differences of the above mentioned only in terms of standard price, which is the ideal indicator free from the market forces i.e free from fluctuation.

   Sales Sub-usage Variance = Standard Price (Revised Standard Quantity– Standard Quantity).

Example:

Product	Budgeted		Actual	
	Qty	Price (₹)	Qty	Price (₹)
A	400	30	500	31
B	200	25	100	24

Calculate the various types of sales variances.

Solution:

Sales value variance = Actual Sales – Standard Sales

First step is to find out the Actual Sales

Actual Sales = Actual Quantity × Actual Price

Actual Sales (A) = 500 × ₹ 31= ₹ 15,500

Actual Sales (B) = 100 × ₹ 24 = ₹ 2,400

Next step is to find out the standard quantity of sales

Standard Quantity of Sales = Standard Quantity × Standard Sales

Standard Sales (A) = 400 × ₹ 30 = ₹ 12,000

Standard Sales (B) = 200 × ₹ 25 = ₹ 5,000

Notes

Sales Value Variance (A) = ₹ 15,500 – ₹ 12,000 = ₹3,500 (Favourable)

Sales Value Variance (B) = ₹ 2,400 – ₹ 5,000 = ₹ 2,600 (Adverse)

Total Sales Value Variance = ₹ 900 (Favourable)

Sales Price Variance:

Sales Price Variance = (Actual Price – Standard Price) Actual Quantity

Sales Price Variance (A) = 500 (₹31 – ₹30) = ₹500 (Favourable)

(B) = 100 (₹24 – ₹25) = ₹100 (Adverse)

₹400 (Favourable)

Sales Volume Variance:

Sales Volume Variance = Standard Price (Actual Quantity – Standard Quantity)

Sales Volume Variance (A) = ₹30 (500 – 400) = ₹3,000 (Favorable)

(B) = ₹25 (100 – 200) = ₹2,500 (Adverse)

₹ 500 (Favourable)

Sales Mix Variance:

Sales Mix Variance = Standard Price (Actual Quantity – Revised Standard Quantity)

First step in the process of computing the sales mix variance is the Revised standard quantity. As far as this problem concerned, sales mix variance would not arise due to equivalent mixes dealt in the problem *viz.* standard (budgeted) mix and actual mix amounted 600 each.

Though it is having equal volumes, revised standard quantity can be computed

$$\text{Revised Standard Quantity} = \frac{\text{Standard Quantity}}{\text{Total Standard Quantity}} \times \text{Total Actual Quantity}$$

$$\text{RSQ for A} = \frac{400}{600} \times 600 = 400$$

$$\text{RSQ for B} = \frac{200}{600} \times 600 = 200$$

Sales Mix Variance (A) = ₹ 30 (500 – 400) = ₹ 3,000 (Favourable)

(B) = ₹ 25 (100 – 200) = ₹ 2,500 (Adverse)

= ₹ 500 (Favourable)

From the above calculations, what is obviously understood?

If the mixes are equivalent to each other, the sales volume variance is equivalent to the sales mix variance. It means that, there would not be a sales mix variance.

Sales Sub-usage Variance:

Sales Sub-usage Variance = Standard Price (Revised Standard Quantity – Actual Quantity)

Sales Sub Usage Variance (A) = ₹30 (400 – 400) = 0

(B) = ₹25 (200 – 200) = 0

0

Notes

There is no sub-usage variance.

Verification:

1. Sales Value Variance = Sales Price Variance + Sales Volume Variance

   900(F) = 400(F) + 500(F)

2. Sales Volume Variance = Sales Mix Variance + Sales Sub-usage Variance

   500(F) = 500(F) + 0

Case Study

For an eagerly awaited policy announcement, the FTP does not have anything that can enthuse exporters. The highly ambitious export targets such as doubling India's share in global trade by 2020 have been envisioned regrettably without any strategy. The sentiments to support labour intensive sectors are noble, but the contents belie hopes. Instead, the FTP tries to appease sectional interests of various commodities.

The key features of the present FTP are inclusion of additional markets in Focus Market Scheme, extension of product coverage in Focus Product Scheme, zero duty under EPCG and reduction in transaction cost. Unfortunately, the policy falls short of expectations in all these areas. For instance, the list of markets included in the Focus Market Scheme is totally at variance with products covered and in fact are akin to square pegs in round holes. Including markets like Vietnam and Cambodia for garments has no meaning as these countries are net exporters of apparels.

Similarly, exclusion of South Korea from the list of markets is inexplicable, especially in the context of the recent Comprehensive Economic Partnership Agreement with that country. An imaginative policy should have leveraged the linkages established under various regional trade agreements aimed at augmenting bilateral trade by including these countries in the list of Focus Market Scheme. Further, excluding cotton fabrics while including synthetic fabrics from the Focus Market Scheme is also inexplicable, especially to countries like Vietnam, Cambodia and South Africa that are leading producers of cotton garments.

Similarly in the Focus Product Scheme, including handloom is a red herring, as the distinction between powerloom, handloom and mill sector was eliminated after the fiscal reforms in the textile sector. The requirement of "Handloom Mark" has been dispensed with, that would reopen the old debate on what constitutes handlooms, thereby encouraging some to take undue advantage.

The policy, while exhorting special measures for labour-intensive sectors, has conveniently ignored the fast developing home textile sector. While the garment sector has been accorded 2% incentives for exports to USA and EU under a scheme valid up to 30 September 2010, the home textile sector which is equally labour-intensive has been denied the benefits. The inclusion of home textiles would have given benefits to clusters of madeups based in Karur, Erode, Sholapur and Panipat. That apart, the benefits of additional duty scrip of 1% granted to status holders for import of capital goods and zero-duty EPCG scheme are non-starters in the textile sector as the beneficiaries under TUFs scheme have been denied the privileges. The reforms relating to the transaction cost like reduction in application fees,

Contd...

Notes

EDI connectivity miss the central point that high cost has arisen on account of infrastructural disabilities such as cost and supply of power, port handling charges, transportation charges and unrebated state levies. The minor tinkering in the FTP will not impart any major gains to India's export competitiveness.

Considering the excellent export performance of competing countries such as Bangladesh, Vietnam and China and the stimulus package offered by these countries, the poor performance of Indian textile export sector cannot be attributed to only the recessionary pressures in global markets. To revive India's competitive advantages and enhance its market share even in a situation of falling demand, we will have to match the extensive support provided by competing countries.

Source: theeconomictimes.com

11.6 Summary

- The purpose of standard costing is to correct the variance, which is in between standard cost and actual cost.
- There are two type of variances viz. cost variance and revenue variance.
- Cost variance can be further classified into three categories: (a) Material Cost Variancem, (b) Labour Cost Variance, (c) Overhead Variance,
- Revenue Variance: Sales Variance.

11.7 Keywords

Cost variance: Identifying the deviations in between the actual cost and standard cost which was already determined.

Favourable Cost Variance: It is due to greater standard cost over the actual cost.

Favourable Revenue Variance: It is due to greater actual revenue than the standards.

Revenue Variance: Identifying the deviations in between the actual revenue and early determined standard revenue.

Standard: It is a predetermined or estimate figure calculated by considering the ideal conditions of the work environment.

Unfavourable Cost Variance: It is due to greater actual cost than the determined standard cost.

Unfavourable Revenue Variance: It is an outcome due to greater standard sales than the actual sales.

Variance: It is tool of standard costing in determining the deviations of the enterprise from the early estimates.

11.8 Self Assessment

Choose the appropriate answer:

1. Variance is identified in between

   (a) Standard and budgeted figures (b) Standard and actual figures

   (c) Budgeted figures and actual (d) None of the above

Notes

2. Variance is/are

   (a) Cost variance (b) Revenue variance

   (c) Expense variance (d) Both (a) & (b)

3. Cost variance is classified into

   (a) Material variance (b) Labour variance

   (c) Expense variance (d) (a), (b) & (c)

4. Variance analysis is for

   (a) Cost planning

   (b) Cost control

   (c) Identification of variance and control deviations

   (d) None of the above

5. When the revised standard mix of the materials will not vary with the standard mix of the materials ?

   (a) Both standard and actual mix of materials are different

   (b) Standard mix of materials are greater than the actual mix of materials

   (c) Both are equivalent to each other

   (d) None of the above

6. Why labour efficiency variance is denominated in terms of standard rate?

   (a) Actual rate is not a measure

   (b) Standard rate is free from the demand and supply of labour force

   (c) Actual measure is a measure of demand and supply of labour force

   (d) None of the above

7. Sales value variance is mainly due to

   (a) Price variance (b) Quantity variance

   (c) Mix variance (d) (a) (b) & (c)

8. Variance is tool of standard costing in determining the deviations of the enterprise from the early

   (a) Estimates (b) Budgets

   (c) Costs (d) Prices

9. The direct labour total variance is the difference between what the output should have cost and what it did cost, in terms of

   (a) Cash (b) Labour

   (c) Material (d) None of these

10. The selling price variance is a measure of the effect on expected

   (a) Price (b) Profit

   (c) Labour (d) None of these

Notes

11. Which of the following cannot be included among the reasons of variance
    (a) Price increase
    (b) Use of workers at rate of pay lower than standard
    (c) Lost time in excess of standard allowed
    (d) None of these

11.9 Review Questions

1. From the data given below, find out the material mix variance.

   Consumption of 100 units of product.

Raw Material	Standard	Actual
A	40 units @ ₹ 50 per unit	50 units @ ₹ 50 per unit
B	60 units @ ₹ 40 per unit	60 units @ ₹ 45 per unit

2. From the following data, calculate materials yield variance.

Particulars	Standard		Actual	
	Qty in Kg	Price	Qty in Kg	Price
Material A	200 units	₹ 12	160 units	₹ 13
Material B	100 units	₹ 10	140 units	₹ 10
	300 units		**300 units**	

   Standard loss allowed is 10% of input. Actual output is 275 units.

3. From the following, find out the material yield variance.

Particulars	Standard		Actual	
	Qty in Kg	Price	Qty in Kg	Price
Material A	60 units	₹ 3,000	300 units	₹ 15,300
Material B	40 units	₹ 1,200	200 units	₹ 5,600

   Standard loss allowed is 10% of input and standard rate of scrap realization is ₹ 6 per unit. Actual output is 440 units.

4. Find out the various labour variances from the following data

   Standard hours per unit = 20 Hours

   Standard rate per unit = ₹ 5

   Actual Production = 1000 units

   Actual time taken = 20,400 Hours

   Actual Rate paid = ₹ 4.80

5. From the following information calculate the labour variances.

	Standard	Actual
Number of men employed	100	90
Output in units	2,500	2,400
Number of working days in a month	20	18
Average wages per man per month	₹ 200	₹ 198

Notes

6. A gang of workers normally consists of 30 men, 15 women and 10 boys. They are paid at standard hourly rates as under:

Men	₹ 80
Women	₹ 60
Boys	₹ 40

In a normal working week of 40 hours, the gang is expected to produce 2,000 units of output.

During the week ended 31st Dec. 2007, the gang consisted of 40 men 10 women and 5 boys. The actual wages paid were @ ₹ 70, ₹ 65 and ₹ 30 respectively 4 hours were lost due to abnormal idle time and 1,600 were produced.

Calculate (a) Labour cost variance, (b) Wage variance, (c) Labour efficiency variance, (d) Gang composition variance, (e) Labour idle time variance.

7. Calculate various overhead variances.

Items	Budget	Actual
No. of working days	20	22
Man hours per day	8,000	8,400
Output per man hour in units	1	.9
Overhead cost	₹ 1,60,000	₹ 1,68,000

8. Maris Ltd. has furnished the following information for the month of July 2008.

	Budget	Actual
Output (Units)	30,000	32,500
Hours	30,000	33,000
Fixed overheads	₹ 45,000	₹ 50,000
Variable overheads	₹ 60,000	₹ 68,000
Working days	25	26

Calculate the variances:

(a) Total overhead variances

(b) Fixed overhead variances

(c) Variable overhead variances.

9. Vision Ltd. furnishes the following information relation to budgeted sales and actual sales for June 2008.

Product	Budgeted		Actual	
	Qty	Price (₹)	Qty	Price (₹)
A	1200	15	880	18
B	800	20	880	20
C	2000	40	2640	38

Calculate sales variance.

Notes

10. Standard Cost for Product RBT

	₹
Materials (10kg × ₹ 8 per kg)	80
Labour (5hrs × ₹ 6 per hr)	30
Variable O/Hds (5hrs × ₹ 8 per hr)	40
Fixed O/Hds (5hrs × ₹ 9 per hr)	45
	195

Budgeted Results

Production	10000 units
Sales	7500 units
Selling Price	₹ 300 per unit

Actual Results

Production	8000 units
Sales	6000 units
Materials	85000 kg Cost ₹ 700000
Labour	36000 hrs Cost ₹ 330900
Variable O/Hds	₹ 400000
Fixed O/Hds	₹ 500000
Selling Price	₹ 260 per unit

Calculate

(a) Material total variance

(b) Material price variance

(c) Material usage variance

(d) Labour total variance

(e) Labour rate variance

(f) Labour efficiency variance

(g) Variable overhead total variance and all sub-variances

(h) Fixed Production overhead total Variance and all sub-variances

(i) Selling price variance

(j) Sales volume variance

Answers: Self Assessment

1.	(b)	2.	(d)
3.	(d)	4.	(c)
5.	(c)	6.	(c)
7.	(d)	8.	(a)
9.	(b)	10.	(b)
11.	(d)		

Notes

11.10 Further Readings

Books

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Online links

www.allinterview.com

www.authorstream.com

Unit 12: Marginal Costing and Profit Planning

Notes

CONTENTS

Objectives

Introduction

12.1 Absorption Costing

12.2 Marginal Costing and Direct Costing

12.3 Differential Costing

12.4 Costs-Volume Profit Analysis

12.4.1 Objectives of Cost-Volume-Profit Analysis

12.4.2 Profit-Volume (P/V) Ratio

12.5 Break-even Analysis

12.5.1 Break Even Point in Units

12.5.2 Advantages of Break-even Analysis

12.5.3 Limitations of Break-even Analysis

12.5.4 Application of Break-even Analysis

12.6 Methods of Break-even Analysis

12.6.1 Break-even Chart

12.6.2 Three Alternatives

12.6.3 Break-even Models and Planning for Profit

12.7 Costing Techniques

12.8 Decisions Involving Alternative Choices

12.9 Summary

12.10 Keywords

12.11 Self Assessment

12.12 Review Questions

12.13 Further Readings

Objectives

After studying this unit, you will be able to:

- Define absorption costing, marginal costing, direct costing and differential costing
- Prepare CVP analysis and break even analysis
- Explain costing Techniques

Notes

Introduction

It is one of the premier tools of management not only to take decisions but also to fix an appropriate price and to assess the level of profitability of the products/services. This is a only costing tool demarcates the fixed cost from the variable cost of the product/service in order to guide the firm to know the minimal point of sales to equate the cost of production. It is a tool of analysis highlighting the relationship in between the cost, volume of sales and profitability of the firm.

12.1 Absorption Costing

Absorption costing technique is also known by other names as "Full costing" or "Traditional costing". According to this technique, all costs are recognised or identified with the products manufactured. Both fixed and variable costs of each product manufactured are taken into account to ascertain the total cost.

According to author, the absorption costing tells as to how much fixed cost is absorbed besides the variable cost by each product manufactured. According to this technique, while the variable costs are directly charged to each unit of the goods produced, the fixed costs are distributed to each category of product manufactured by the same firm. In absorption costing, "Fixed cost" will also be taken into account in ascertaining the profit on sale.

This technique is called traditional costing, as this system of costing emerged from the beginning of the factory stage. In this technique, "fixed cost" refers to the closing stock of material held by the firm. These are charged against the sales later, as a part of the goods sold.

Notes The traditional technique popularly known as total cost or absorption costing technique does not make any difference between fixed and variable cost in the calculation of profit.

Absorption costing can be calculated by the following ways:

	₹	₹
Sales Revenue		xxxxx
Less: Absorption Cost of Sales		
Opening Stock (Valued @ absorption cost)	xxxx	
Add: Production Cost (Valued @ absorption cost)	xxxx	
Total Production Cost	xxxx	
Less: Closing Stock (Valued @ absorption cost)	(xxx)	
Absorption Cost of Production	xxxx	
Add: Selling, Admin & Distribution Cost	xxxx	
Absorption Cost of Sales		(xxxx)
Un-Adjusted Profit		xxxxx
Fixed Production O/H absorbed	xxxx	

Contd...

Notes

Fixed Production O/H incurred	(xxxx)	
(Under)/Over Absorption		xxxxx
Adjusted Profit		xxxxx

Limitations of Absorption Costing

The following are the limitations of absorption costing:

1. In absorption costing, a portion of fixed cost is carried over to the subsequent accounting period as part of closing stock which is an unsound practice because costs pertaining to a period should not be allowed to be vitiated by the inclusion of costs pertaining to the previous period and vice-versa.
2. Absorption costing is dependent on the levels of output which may vary from period to period, and consequently cost per unit changes due to the existence of fixed overhead. Unless fixed overhead rate is based on normal capacity, such changed costs are not helpful for the purposes of comparison and control.
3. The cost to produce an extra unit is variable production cost. It is realistic to the value of closing stock items as this is a directly attributable cost. The size of total contribution varies directly with sales volume at a constant rate per unit. For the decision-making purpose of management, better information about expected profit is obtained from the use of variable costs and contribution approach in the accounting system.

12.2 Marginal Costing and Direct Costing

According to ICMA, London, "Marginal cost is the amount at any given volume of output, by which aggregate costs are charged, if the volume of output is increased or decreased by one unit."

Marginal cost is the cost nothing but a change occurred in the total cost due to changes taken place on the level of production i.e either an increase/decrease by one unit of product.

Example: The firm XYZ Ltd. incurs ₹ 1000 for the production of 100 units at one level of operation. By increasing only one unit of product i.e. 101 units, the firm's total cost of production amounted ₹ 1010.

Total cost of production at first instance (C') = ₹1000

Total cost of production at second instance (C") = ₹1010

Total number of units during the first instance (U') = 100

Total number of units during the second instance (U") = 101

Increase in the level of production and Cost of production:

Change in the level of production in units = U"-U'= DU

Change in the total cost of production = C"– C'= DC

$$\text{Marginal Cost} = \frac{\text{Change (Increase) in the Total Cost of Production}}{\text{Change (Increase) in the Level of Production}} = \frac{\Delta C}{\Delta U} = \frac{₹\ 10}{1} = ₹\ 10$$

Notes

If the same firm reduces the total volume from 100 units to 99 units, the total cost of production ₹ 990/-

Decrease in the level of production and cost of production:

$$\text{Marginal Cost} = \frac{\text{Change (Increase) in the Total Cost of Production}}{\text{Change (Increase) in the Level of Production}} = \frac{\Delta C}{\Delta U} = \frac{₹\ 10}{1} = ₹\ 10$$

Why marginal cost is called as incremental cost?

From the above example, it is obviously understood that marginal cost is nothing but a cost which incorporates the incremental changes in the cost of production due to either an increase or decrease in the level of production by one unit, meant as incremental cost.

Why marginal cost is called in other words as variable cost?

From the following classifications of cost, the inter twined relationship in between the variable cost and marginal cost is explained as below:

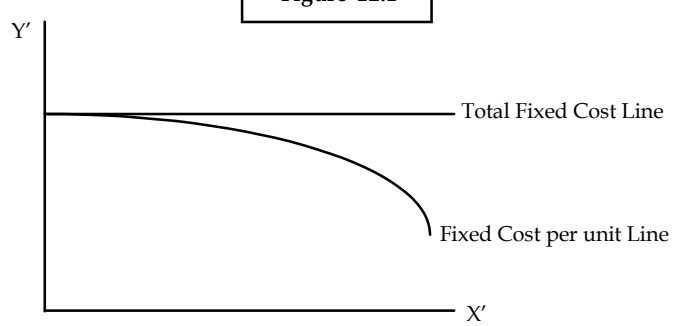
Table 12.1: Statement of Fixed, Variable and Total Costs and per Unit

S.No.	Units	Fixed Cost (₹)	Fixed Cost per unit (₹)	Variable Cost (₹)	Variable Cost per unit (₹)	Marginal Cost (₹) ΔC/ΔU	Total Cost (₹)
1.	1	500	500	10	10	10	510
2.	50	500	100	500	10	10	1000
3.	100	500	5	1000	10	10	1500
4.	150	500	3.333	1500	10	10	2000

Fixed Cost: It is a cost remains constant or fixed irrespective level of production.

Example: Rent ₹ 500 is to be paid irrespective level of production. It remains constant/ fixed irrespective of changes taken place on the level of production.

Figure 12.1

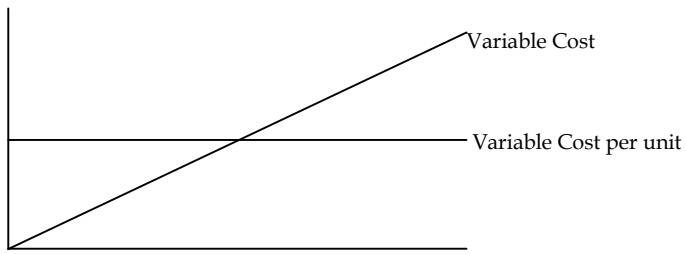


X′- Units Y′- Cost in Rupees

Variable cost: It is a cost, which varies with level of production.

Notes

Figure 12.2



X'- Units Y'- Cost in Rupees

The following are the various components of variable cost:

1. ***Direct Materials:*** Materials cost consumed for the production of goods.
2. ***Direct Labour:*** Wages paid to the labourers who directly involved in the production of goods.
3. ***Direct Expenses:*** Other expenses directly involved in the production stream.
4. ***Variable portion of Overheads:*** Generally the overheads can be classified into two categories, *viz.* Variable overheads and Fixed overheads.

The variable overheads is the cost involved in the procurement of indirect materials, indirect labour and indirect expenses.

Indirect Material- cost of fuel, oil and soon

Indirect Labour- Wages paid to workers for maintenance of the firm.

From the Table 12.1 the marginal cost is equivalent to the variable cost per unit of the various levels of production. The fixed cost of ₹ 500 is the cost remains the same at not only irrespective levels of production but also already absorbed at the initial level of production. The initial absorption of fixed overhead led the marginal cost to become as variable cost.

Semi-variable cost: Another major classification is semi variable/fixed cost which is a cost partly fixed/variable to the certain level of production or consumption e.g. Electricity charges, telephone charges and so on.

It jointly discards the importance of the fixed cost and the semi- variable cost for analysis while ascertaining the marginal cost.

Marginal Costing is defined as "the ascertainment of marginal cost and of the effect on profit of changes in volume or type of output by differentiating between fixed and variable costs."

Caution In marginal costing, the change in the level of cost of operation is equivalent to variable cost due to fixed cost component which is fixed irrespective level of outputs.

Example: The following figures are extracted from the books of KSBS Ltd. Find out profit by using marginal costing and absorption costing. Is there any variations in the results obtained under the two methods is given below?

The basic production data are:

Normal volume of production = 19,500 units per period

Notes

Sale price – ₹ 4 per unit

Variable cost – ₹ 2 per unit

Fixed cost – ₹ 1 per unit

Total fixed cost = ₹ 19,500 (₹ 1 × 19,500 units, normal)

Selling and distribution costs have been omitted. The opening and closing stocks consist of both finished gods and equivalent units of work-in-progress.

Other informations:

	Period 1	Period II	Period III	Period IV	Total
Opening stock units	–	–	4,500	1,500	–
Production units	19,500	22,500	18,000	22,500	82,500
Sales units	19,500	18,000	21,000	24,000	82,500
Closing stock units	–	4,500	1,500	–	–

Solution:

Marginal Costing Method

	Period 1	Period II	Period III	Period IV	Total
	₹	₹	₹	₹	₹
Sales	78,000	72,000	84,000	96,000	3,30,000
Direct cost:					
Opening stock @ ₹ 2 per unit	–	–	9,000	3,000	–
Variable cost:					
@ ₹ 2 per unit	39,000	45,000	36,000	45,000	1,65,000
Closing stock:					
@ ₹ 2 per unit	–	9,000	3,000	–	–
Cost of goods sold	39,000	36,000	42,000	48,000	1,65,000
Contribution	39,000	36,000	42,000	48,000	1,65,000
Fixed cost	19,500	19,500	19,500	19,500	78,000
Profit	19,500	16,500	22,500	28,500	87,000

Absorption Costing Method

Sales	78,000	72,000	84,000	96,000	3,30,000
Opening stock @ ₹ 3 per unit	–	—	13,500	4,500	–
Cost of production @ ₹ 3 per unit	58,500	67,500	54,000	67,500	2,47,500
Less: Cost of closing stock @ ₹ 3 per unit	–	13,500	4,500	–	–
Cost of sales (actual)	58,500	54,000	63,000	72,000	2,47,500
Less: Over-absorbed fixed cost		3,000		3,000	6,000
Add: Under-absorbed fixed cost		–	1,500	–	1,500
Profit	19,500	21,000	19,500	27,000	87,000

The relationship shown above may be summarized as follows:

(i) When output is equal to sales i.e., with no opening or closing stock, the profit under absorption costing and marginal costing is equal;

Notes

(ii) When output is less than sales i.e., closing stock is less than opening stock, the profit under marginal costing is greater than the profit under absorption costing;

(iii) When output is greater than sales i.e., closing stock is more than the opening stock, the profit under the marginal costing is less than the profit under absorption costing.

12.3 Differential Costing

Differential cost is the difference in the total cost that will arise from the selection of one alternative instead of another. The alternate choice may arise on account of change in the method of production, sales volume, product mix, price, selection of an additional sales channel, make or buy decisions, etc.

Characteristics of Differential Costing

The following are the key characteristics of differential costing:

1. In order to ascertain the differential costs, only total cost is needed and not cost per unit.
2. Existing level is taken to be the base for comparison with some future or forecasted level.
3. Differential cost is the economist's concept of marginal cost.
4. It may be referred to as incremental cost when the difference in cost is due to increase in the level of production and decremental costs when difference in cost is due to decrease in the level of production.
5. It does not form part of the accounting records, but may be incorporated in budgets.
6. It is not necessary to adopt marginal cost technique for differential cost analysis because it can be worked out on the method of absorption costing or standing costing.
7. What is said of the differential cost above, applies to differential revenue also.

Example: Make or Buy Decision

Suppose a manufacturing company incurs the following costs with respect to producing a product "A" (5000 units)

Materials	₹ 500,000
Labor	₹ 250,000
Overheads	₹ 200,000
Indirect expenses	₹ 150,000
Total expenses	₹ 1,100,000

Suppose the same product "A" is available from an outsider at ₹ 200 per unit, the company will decide to buy rather than to make because buying will cost the company only ₹ 1,000,000, which is lower than the cost of production.

12.4 Costs-Volume Profit Analysis

The Cost-Volume-Profit (CVP) analysis helps management in finding out the relationship of costs and revenues to profit. The aim of an undertaking is to earn profit. Profit depends upon a large number of factors, the most important of which are the costs of the manufacturer and the volume of sales effected. Both these factors are interdependent – volume of sales depends upon

Notes

the volume of production, which in turn is related to costs. Cost again is the result of the operation of a number of varying factors such as:

1. Volume of production,
2. Product mix,
3. Internal efficiency,
4. Methods of production,
5. Size of plant, etc.

Of all these, volume is perhaps the largest single factor which influences costs which can basically be divided into fixed costs and variable costs. Volume changes in a business are a frequent occurrence, often necessitated by outside factors over which management has no control and as costs do not always vary in proportion to changes in levels of output, management control of the factors of volume presents a peculiar problem.

As profits are affected by the interplay of costs and volume, the management must have, at its disposal, an analysis that can allow for a reasonably accurate presentation of the effect of a change in any of these factors which would have no profit performance. Cost-volume-profit analysis furnishes a picture of the profit at various levels of activity. This enables management to distinguish between the effect of sales volume fluctuations and the results of price or cost changes upon profits. This analysis helps in understanding the behaviour of profits in relation to output and sales.

Fixed costs would be the same for any designated period regardless of the volume of output accomplished during the period (provided the output is within the present limits of capacity). These costs are prescribed by contract or are incurred in order to ensure the existence of an operating organisation. Their inflexibility is maintained within the framework of a given combination of resources and within each capacity stage such costs remain fixed regardless of the changes in the volume of actual production. As fixed costs do not change with production, the amount per unit declines as output rises.

Absorption or full costing system seeks to allocate fixed costs to products. It creates the problem of apportionment and allocation of such costs to various products. By their very nature, fixed costs have little relation to the volume of production.

Variable costs are related to the activity itself. The amount per unit remains the same. These costs expand or contract as the activity rises or falls. Within a given time span, distinction has to be drawn between costs that are free of ups and downs of production and those that vary directly with these changes.

Study of behaviour of costs and CVP relationship needs proper definition of volume or activity. Volume is usually expressed in terms of sales capacity expressed as a percentage of maximum sales, volume of sales, unit of sales, etc. Production capacity is expressed as a percentage of maximum production, production in revenue of physical terms, direct labour hours or machine hours.

Analysis of cost-volume-profit involves consideration of the interplay of the following factors:

1. Volume of sales
2. Selling price
3. Product mix of sales
4. Variable cost per unit
5. Total fixed costs

Notes

The relationship between two or more of these factors may be (a) presented in the form of reports and statements (b) shown in charts or graphs, or (c) established in the form of mathematical deduction.

12.4.1 Objectives of Cost-Volume-Profit Analysis

The objectives of cost-volume-profit analysis are given below:

1. In order to forecast profit accurately, it is essential to know the relationship between profits and costs on the one hand and volume on the other.
2. Cost-volume-profit analysis is useful in setting up flexible budgets which indicate costs at various levels of activity.
3. Cost-volume-profit analysis is of assistance in performance evaluation for the purpose of control. For reviewing profits achieved and costs incurred, the effects on cost of changes in volume are required to be evaluated.
4. Pricing plays an important part in stabilising and fixing up volume. Analysis of cost-volume-profit relationship may assist in formulating price policies to suit particular circumstances by projecting the effect which different price structures have on costs and profits.
5. As predetermined overhead rates are related to a selected volume of production, study of cost-volume relationship is necessary in order to know the amount of overhead costs which could be charged to product costs at various levels of operation.

12.4.2 Profit-Volume (P/V) Ratio

The ratio or percentage of contribution margin to sales is known as P/V ratio. This ratio is known as marginal income ratio, contribution to sales ratio or variable profit ratio. P/V ratio, usually expressed as a percentage, is the rate at which profits increase with the increase in volume. The formulae for P/V ratio are:

P/V ratio = Marginal contribution/Sales

Or

Sales value - Variable cost/Sales value

Or

1 - Variable cost/Sales value

Or

Fixed cost + Profit/Sales value

Or

Change in Profits/Contributions/Changes

A comparison for P/V ratios of different products can be made to find out which product is more profitable. Higher the P/V ratio more will be the profit and lower the P/V ratio, lesser will be the profit. P/V ratio can be improved by:

1. Increasing the selling price per unit.
2. Reducing direct and variable costs by effectively utilising men, machines and materials.
3. Switching the product to more profitable terms by showing a higher P/V ratio.

Notes

Caselet

Cost-Volume-Profit Analysis

N. R. Parasuraman

ONE issue of paramount interest to management is the impact of costs and volume on profits. If a linear relationship could be established among costs, volume and profits, it would help decision-makers to figure out the right volume, the right cost and consequently the right profit.

That profit is the difference between sales turnover (in value) and cost is common knowledge. Sales turnover equals sale price per unit multiplied by the number of units. This means that sales turnover goes up with higher volume and comes down with lower volume. One also knows intuitively that total cost rises with higher volume and falls with lower volume, but the extent of this movement is not known. Under the cost-volume-profit analysis (CVP analysis), given the cost pattern, the impact of costs on profits for various volumes, as also of volumes on profits, is studied.

The analysis would be easier if the cost can be segregated into fixed and variable. In fact, the basic tenet of CVP analysis is to split the cost into variable, which varies with volume, and fixed, which remains constant regardless of the volume. Let us assume that such a division of costs is easily possible. And it may be noted that even when such an absolute segregation is not possible, there are statistical tools which enable the analyst to do so with a fairly high degree of accuracy.

Consider the following example:

A firm sells its products at ₹ 10 per unit. The variable cost per unit is ₹ 6. And regardless of the volume, the firm has to spend ₹ 50,000 on other expenses (fixed expenses). In this case, the profit chart of the firm for various volumes can be analysed as follows:

Sale price per unit - ₹ 10

Variable cost per unit - ₹ 6

Contribution per unit - ₹ 4 (₹ 10 - ₹ 6)

No. of units required to meet fixed costs - ₹ 50,000/₹ 4 = 12,500 units

Here, the difference between the sales price per unit and the variable cost per unit is called the contribution per unit. This means that for every unit sold, ₹ 4 comes in as a contribution to meet fixed expenses. How many such units will be needed to m eet the fixed expenses completely? This can easily be computed as 12,500. So, in terms of units, 12,500 units are required to meet both the variable and the fixed costs. This is called the break-even point (BEP) in units.

The relationship between contribution and sales can also be expressed as a ratio, which is called contribution margin. In the example, the contribution margin is 4/10 or 0.4. The BEP in rupees can be found by dividing the fixed cost with the contribution margin. This will be ₹ 50,000/0.4 = ₹ 1,25,000.

Understanding the BEP concept enables one to take a number of strategic decisions. The following is an illustrative list of the uses of CVP and BEP analyses:

Contd...

Notes

* Deciding on a level of sales to achieve a targeted profit: At the BEP of sales, there is neither profit nor loss. It means that the contribution (sales minus variable expenses) has just about covered the fixed expenses. This suggests that for sales beyond this point, the entire contribution will be profits because there is no more fixed expenses to meet. So, if a profit of, say, ₹ 1,00,000 is targeted in the illustration, all that is to be done is to sell additional un its that will make the incremental contribution beyond meeting the fixed expenses as ₹ 1,00,000.

In other words, the new volume is targeted to cover not only the fixed expenses of ₹ 50,000, but also the profit of ₹ 1,00,000. So, dividing ₹ 1,50,000 by the contribution per unit of ₹ 4 gives us 37,500 units. Thus, 37,500 units will have to be manufactured to achieve a profit of ₹ 1,00,000.

The number of units to be manufactured to achieve target profit = target profit plus fixed expenses divided by contribution per unit.

* Determining the profit at a targeted level of sales: Similarly, if the management has targeted a level of sales on the basis of its market survey or otherwise, the profits that will emerge from that level of sales can be determined using CVP analysis. The contribution margin per unit multiplied by the number of units produced over and above the BEP gives us this figure. Of course, profits can always be computed as the difference between sales and total cost. But what CVP analysis achieves is that incremental profits from selling additional units can be easily calculated on the basis of the established relationship between cost and volume.

* Determining the impact of additional fixed costs: If the fixed costs go up, the revised BEP can be computed. A no-profit, no-loss situation comes up only at the increased point now, consequent to the increased fixed costs. The entire structure of relationship between cost and volume will undergo a change consequent to this increase in fixed cost.

In real life, it may be difficult to segregate cost strictly into its fixed and variable elements. What can be attempted is to bring about as close a split as possible. The advantages of CVP analysis would far outweigh whatever difficulties one might face in segregation.

Source: thehindubusinessline.com

12.5 Break-even Analysis

Break even analysis examines the relationship between the total revenue, total costs and total profits of the firm at various levels of output. It is used to determine the sales volume required for the firm to break even and the total profits and losses at other sales level. Break even analysis is a method, as said by Dominick Salnatore, of revenue and total cost functions of the firm. According to Martz, Curry and Frank, a break even analysis indicates at what level cost and revenue are in equilibrium.

In case of break even analysis, the break even point is of particular importance. Break even point is that volume of sales where the firm breaks even i.e., the total costs equal total revenue. It is, therefore, a point where losses cease to occur while profits have not yet begun. That is, it is the point of zero profit.

$$\text{BEP} = \frac{\text{Fixed Costs}}{\text{Selling price} - \text{Variable costs per unit}}$$

Notes

$$\text{For Example,} = \frac{\text{Fixed Costs ₹ 10,000}}{\text{Selling price ₹ 5 per unit} - \text{Variable costs ₹ 3 per unit}}$$

$$\text{Therefore, BEP} = \frac{₹\ 10{,}000}{5-3} = 5{,}000 \text{ units.}$$

The conclusion that can be drawn from the above example is that sales volume of 5000 units will be the accurate point at which the manufacturing unit would not make any loss or profit.

12.5.1 Break Even Point in Units

Assume the selling price is ₹20/-per unit, variable cost per unit ₹10/-and the fixed cost ₹1000/- Find out the break-even point.

	₹
Sales	20/-
Variable Cost	10/-
Contribution	10/-
Fixed Cost	1000/-
Profit	(-) 990/-

If the firm produces only one unit, the amount of loss is ₹ 990/-. To avoid the amount of loss, how many units are to be produced ?

As already highlighted, BEP is the point at which the firm neither earns profit nor incurs loss.

Profit/Loss is a resultant out of contribution while meeting the fixed cost volume of the transaction. From the above example, the contribution per unit is ₹ 10/, which is not sufficient to meet the fixed cost volume of ₹ 1000. The purpose of finding out the BEP in units is to identify the level of contribution which is not only equivalent as well as to meet fixed cost of the transaction, but also to avoid loss. To raise the volume of contribution at par with the fixed cost volume, fixed cost has to be related to the contribution margin per unit through the ratio given below:

$$\text{Fixed cost} = \text{“X” units} \times \text{Contribution Margin Per Unit}$$

“X” units can be found out from the following

$$\therefore \quad \text{“X” units} = \frac{\text{Fixed Cost}}{\text{Contribution Margin Per Unit}}$$

The total number of units “X” which equate the contribution volume of “X” units with the total fixed cost is the Break Even Point (Units).

$$\text{Break Even Point (Units)} = \frac{\text{Fixed Cost}}{\text{Contribution Margin Per Unit}}$$

$$= \frac{₹\ 1000}{₹\ 10} = 100 \text{ Units}$$

The above illustration reveals that how many number of times the contribution margin per unit should be equivalent to the total fixed cost volume. Hence the number of times is nothing but the units required to have equivalent volume of contribution to the tune of fixed cost.

Notes

Verification

At the level of 100 units

Sales	100 × ₹ 20	₹2,000/
Variable Cost	100 × ₹ 10	₹1,000/
Contribution	100 × ₹ 10	₹1,000/
Fixed Cost		₹1,000/
Profit/Loss		0

Break Even Point (Sales Volume ₹)

Break even point in sales can be found out by two methods.

(1) Selling Price Method

(2) PV Ratio Method.

(1) Selling Price Method: Under this method Break even sales volume in rupees is found out through the product of Break Even Point in units and selling price per unit

BEP (₹) = Break Even Point (units) × Selling price per unit

(2) PV Ratio Method: Under this method, break even sales volume in rupees can be determined through the following ratio

$$\text{BEP (₹)} = \frac{\text{Fixed Cost}}{\text{PV ratio}}$$

What is PV ratio?

PV ratio is Profit-Volume ratio which establishes the relationship in between the profit and volume of sales. It a ratio normally expressed in terms of contribution towards volume of sales. It is expressed in terms of percentage.

Utility of PV ratio:

- To find out the Break Even Point in sales volume
- To identify the desired level of profit at any sales volume
- To determine the sales volume to earn required level of profit
- To identify the better product mix among the alternatives available etc.

$$\text{Profit-Volume Ratio (PV ratio)} = \frac{\text{Sales} - \text{Variable cost}}{\text{Sales}} = \frac{\text{Contribution}}{\text{Sales}}$$

From the above example

PV ratio at the level of 100 units

$$\text{PV ratio} = \frac{₹\ 1000}{₹\ 2000} \times 100 = 50\%$$

Notes

PV ratio at the level of one unit

$$\text{PV ratio} = \frac{₹\ 10}{₹\ 20} \times 100 = 50\%$$

From the above workings, it is obviously understood that every unit of sale contributes 50% towards in covering the fixed cost and profit.

12.5.2 Advantages of Break-even Analysis

The main advantages of using break even analysis in managerial decision making can be the following:

1. It helps in determining the optimum level of output below which it would not be profitable for a firm to produce.
2. It helps in determining the target capacity for a firm to get the benefit of minimum unit cost of production.
3. With the help of the break even analysis, the firm can determine minimum cost for a given level of output.
4. It helps the firms in deciding which products are to be produced and which are to be bought by the firm.
5. Plant expansion or contraction decisions are often based on the break even analysis of the perceived situation.
6. Impact of changes in prices and costs on profits of the firm can also be analysed with the help of break even technique.
7. Sometimes a management has to take decisions regarding dropping or adding a product to the product line. The break even analysis comes very handy in such situations.
8. It evaluates the percentage financial yield from a project and thereby helps in the choice between various alternative projects.
9. The break even analysis can be used in finding the selling price which would prove most profitable for the firm.
10. By finding out the break even point, the break even analysis helps in establishing the point wherefrom the firm can start payment of dividend to its shareholders.

12.5.3 Limitations of Break-even Analysis

The following are the key limitations of break-even analysis:

1. Break even analysis is generally used to find out the output level at which the total fixed cost of a company are covered up by the contributions. But due to non-availability of separate data for fixed and variable cost for each product manufactured by the company the analysis had to be carried out with respect to time.
2. The analysis itself has got some inherent limitations which have been mentioned earlier.
3. The company considered manufacturing a wide range of products and is operating at various locations. Hence, to carry out the analysis at company scale is a very complex procedure which involves sorting of relevant data from a heap of data and then compiling it in the form required by the analysis. Generally companies don't differentiate very clearly and hence don't record costs on the basis of fixed and variable cost.

Notes

4. Data needed for the analysis is generally kept secret by the companies – otherwise it can indicate their profit margins per unit.

12.5.4 Application of Break-even Analysis

Break even analysis is a very generalised approach for dealing with a wide variety of questions associated with profit planning and forecasting. Some of the important practical applications of break even analysis are:

1. What happens to overall profitability when a new product is introduced?
2. What level of sales is needed to cover all costs and earn, say, ₹ 1,00,000 profit or a 12% rate of return?
3. What happens to revenues and costs if the price of one of a company's product is hanged?
4. What happens to overall profitability if a company purchases new capital equipment or incurs higher or lower fixed or variable costs?
5. Between two alternative investments, which one offers the greater margin of profit (safety)?
6. What are the revenue and cost implications of changing the process of production?
7. Should one make, buy or lease capital equipment?

Example: From the following information relating to quick standards Ltd., you are required to find out (i) PV ratio (ii) break even point (iii) margin of safety (iv) calculate the volume of sales to earn profit of ₹ 6,000/-

Total Fixed Costs ₹ 4,500

Total Variable Cost ₹ 7,500

Total Sales ₹ 15,000

Solution:

First step to find out the Contribution volume

Sales	₹ 15,000
Variable Cost	₹ 7,500
Contribution	₹ 7,500
Fixed Cost	₹ 4,500
Profit	₹ 3,000

1. Second step to determine the PV ratio

$$\text{PV ratio} = \frac{\text{Contribution}}{\text{Sales}} \times 100 = \frac{7,500}{15,000} \times 100 = 50\%$$

Third step to find out the Break even sales

2. $$\text{Break even sales} = \frac{\text{Fixed cost}}{\text{PV ratio}} = \frac{4,500}{50\%} = 9,000$$

Notes

3. Margin of safety can be found out in two ways

   (a) Margin of Safety = Actual sales – Break even sales

   = ₹15,000 – ₹9,000= ₹6,000

   (b) Margin of Safety = $\frac{\text{Profit}}{\text{PVratio}} = \frac{₹\ 3,000}{50\%} = ₹6,000$

4. Sales required to earn profit = ₹ 6,000/-

   To determine the sales volume to earn desired level of profit

$$= \frac{\text{Fixed Cost + Desired Profit}}{\text{PV ratio}}$$

$$= \frac{₹\ 4,500 + ₹\ 6,000}{50\%} = ₹21,000$$

12.6 Methods of Break-even Analysis

The break even analysis can be performed by the following method:

12.6.1 Break-even Chart

The difference between Price and Average Variable Cost (P – AVC) is defined as 'profit contribution'. That is, revenue on the sale of a unit of output after variable costs are covered represents a contribution toward profit. At low rates of output, the firm may be losing money because fixed costs have not yet been covered by the profit contribution. Thus, at these low rates of output, profit contribution is used to cover fixed costs. After fixed costs are covered, the firm will be earning a profit.

A manager may want to know the output rate necessary to cover all fixed costs and to earn a "required" profit of R. Assume that both price and variable cost per unit of output (AVC) are constant. Profit is equal to total revenue (P.Q.) less the sum of Total Variable Costs (Q.TVC) and fixed costs. Thus

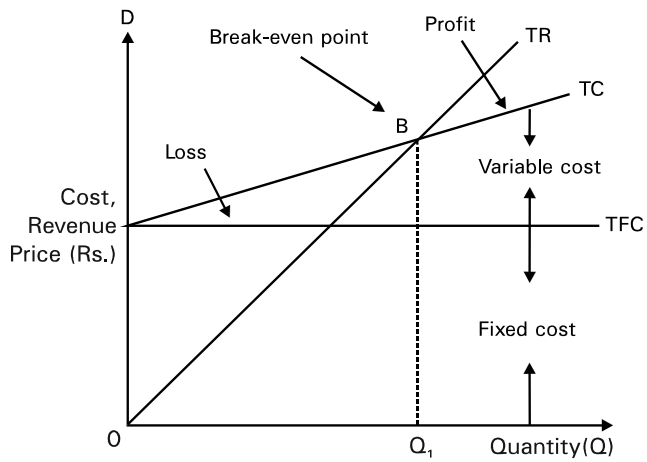
$$\pi_R = PQ - [(Q.\ AVC) + FC]$$

$$\pi_R = TR - TC$$

The break even chart shows the extent of profit or loss to the firm at different levels of activity. A break even chart may be defined as an analysis in graphic form of the relationship of production and sales to profit. The Break even analysis utilises a break even chart in which the Total Revenue (TR) and the Total Cost (TC) curves are represented by straight lines, as in Figure 12.3.

Notes

Figure 12.3



In the figure total revenues and total costs are plotted on the vertical axis whereas output or sales per time period are plotted on the horizontal axis. The slope of the TR curve refers to the constant price at which the firm can sell its output. The TC curve indicates Total Fixed Costs (TFC) (The vertical intercept) and a constant average variable cost (the slope of the TC curve). This is often the case for many firms for small changes in output or sales. The firm breaks even (with TR=TC) at Q1 (point B in the figure) and incurs losses at smaller outputs while earnings profits at higher levels of output.

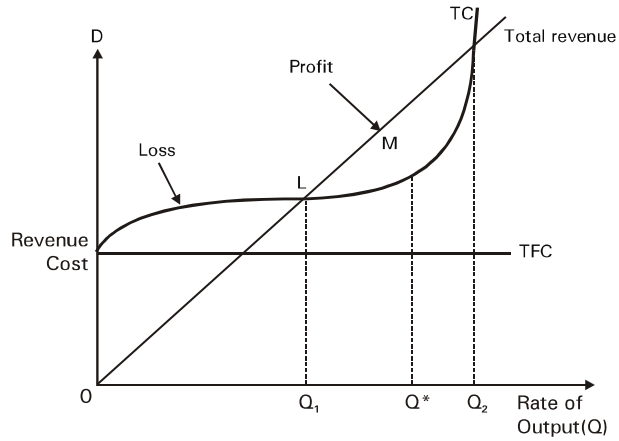
Both the Total Cost (TC) and Total Revenue (TR) curves are shown as linear. TR curve is linear as it is assumed that the price is given, irrespective of the output level. Linearity of TC curve results from the assumption of constant variable costs.

If the assumptions of constant price and average variable cost are relaxed, break even analysis can still be applied, although the key relationship (total revenue and total cost) will not be linear functions of output. Nonlinear total revenue and cost functions are shown in Figure 12.4. The cost function is conventional in the sense that at first costs increase but less than in proportion to output and then increase more than in proportion to output. There are two break even points – L and M. Note that profit which is the vertical distance between the total revenue and total cost functions, is maximised at output rate Q*.

Of the two break even points, only the first, corresponding to output rate Q_1 is relevant. When a firm begins production, management usually expects to incur losses. But it is important to know at what output rate the firm will go from a loss to a profit situation. In Figure 12.4 the firm would want to get to the break even output rate Q_1 as soon as possible and then of course, move to the profit maximising rate Q*. However, the firm would not expand production beyond Q* because this would result in a reduction of profit.

Notes

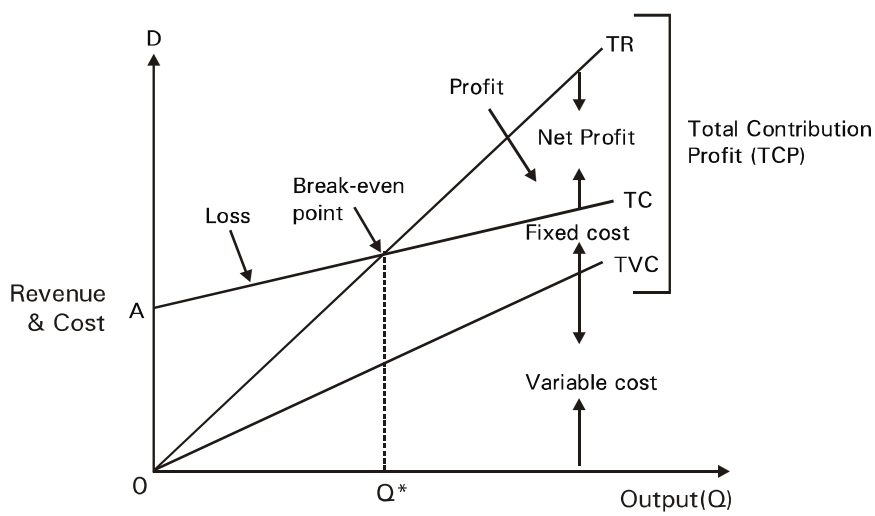
Figure 12.4



Contribution Margin

In the short run, where many of the firms costs are fixed, businessmen are often interested in determining the contribution additional sales make towards fixed costs and profits. Contribution analysis provides this information. Total contribution profit is defined as the difference between total revenues and total variable costs, which equals price less average variable cost on a per unit basis. Figure 12.5 highlights the meaning of contribution profit. Total contribution profit, it can be seen, is also equal to total net profit plus total fixed costs.

Figure 12.5



Contribution profit analysis provides a useful format for examining a variety of price and output decisions.

As is clear from Figure 12.5 Total Contribution Profit (TCP) = Total Revenue (TR) – Total Variable Cost (TVC)

= Total Net Profit (TNP) + Total Fixed Cost (TFC)

Therefore, if TNP = 0 then, TCP = TFC. This occurs at break even point. From the above equation it is also clear that

Notes

TR = TCP + TVC

= (TNP + TFC) + TVC

Total Contribution Profit (TCP)

= TR – TVC

= Net Profit + Fixed Cost

Task

Break even sales	₹1,60,000
Sales for the year 2008	₹ 2,00,000
Profit for the year 2008	₹12,000

Calculate:

1. Profit or loss on a sale value of ₹ 3,00,000.
2. During 2009, it is expected that selling price will be reduced by 10%. What should be the sale if the company desires to earn the same amount of profit as in 2008?

12.6.2 Three Alternatives

The break even point may now be computed in one of three different but interrelated ways. To illustrate, assume that a factory can produce a maximum of 20,000 units of output per month. These 20,000 units can be sold at a price of ₹ 100 per unit. Variable costs are ₹ 20 per unit and the total fixed costs are ₹ 2,00,000.

1. By direct application of the equation, $Q_B = \frac{TFC}{(P\text{-}AVC)}$

$$= \frac{2,00,000}{100-20} = 2500 \text{ units}$$

In order to verify this, we could simply compute the TR and the TC when output equals 2500 units

TR = P × Q

= 100 × 2500

= ₹ 250,000

TC = TFC + Q(AVC)

= (200,000) + (2500) (₹ 20)

= ₹ 250,000

2. By modification of the equation above when one is to determine the break even measured in terms of rupee sales

$$Q_B = \frac{TFC}{P-AVC} = \frac{TFC}{1-\frac{AVC}{P}} \quad \ldots(1)$$

or $S_B = P.Q_B = \left(\frac{TFC}{P-AVC}\right).P$

Notes

$$= \frac{TFC}{1 - \left(\frac{AVC \,.\, Q_B}{P \,.\, Q_B}\right)}$$

$$S_B = \frac{TFC}{1 - \left(\frac{TVC}{TR}\right)} \qquad \ldots(2)$$

or

Where S_B is the break-even sales level. The denominator, $1 - \left(\frac{TVC}{TR}\right)$, provides a measure of the contribution made by the product to recover fixed costs. For example, the break even level in rupee sales is :

$$S_B = \frac{₹\ 2,00,000}{1 - \left(\frac{20}{100}\right)} = ₹\ 2,50,000$$

which is the same result that can be obtained by multiplying the break even quantity by unit price. In equation (1) the contribution margin is calculated on a per unit basis from the ratio of AVC to price. In equation (2) the contribution margin is calculated on a total sales revenue basis from the ratio of TVC to TR. The ratio is the same in each case and in both the situations the calculated ratio is subtracted from the equation, Q_B (P – AVC) = TVC, to yield the percentage of revenue that contributes to recovery of fixed costs or overheads.

3. In order to determine the break even point in terms of percentage utilisation of plant capacity (% B), (or load factor to be achieved) the equation:

$$Q_B = \frac{TFC}{(P - AVC)} = \frac{TFC}{ACM} \text{ has}$$

to be modified as

$$\%\ B = \frac{TFC}{(P - AVC) \times Q(cap)} \times 100$$

where, Q (cap) is the maximum capacity of the plant expressed in units of output.

$$\%\ B = \frac{₹\ 2,00,000}{(₹\ 100 - ₹\ 20)\ 20,000} \times 100$$

= 12.5%, which indicates that the firm can break even by using only 12.5% of its capacity.

Example: Indian Airlines has a capacity to carry a maximum of 10,000 passengers per month from Kolkata to Guwahati at a fare of ₹ 500. Variable costs are ₹ 100 per passenger, and fixed costs are ₹ 3,00,000 per month. How many passengers should be carried per month to break even? What load factor (i.e., average percentage of seating capacity filled) must be reached to break even?

Solution:

Notes

P – AVC = ₹ 500 – ₹ 100 = ₹ 400

$$Q_B(\text{Passengers}) = \frac{₹\ 30,00,000}{₹\ 400} = 7,500 \text{ passengers}$$

The break even sales value

$$Q_B = \frac{₹\ 30,00,000}{1-\left(\frac{₹\ 00}{₹\ 500}\right)} = \frac{₹\ 30,00,000}{0.8} = ₹\ 37,50,000$$

12.6.3 Break-even Models and Planning for Profit

The break even point represents the volume of sales at which revenue equals expenses; that is, at which profit is zero. The break even volume is arrived at by dividing fixed costs (costs that do not vary with output) by the contribution margin per unit, i.e., selling price minus variable costs (costs that vary directly with output). In certain situations, and especially in the consideration of multi-products, break even volume is measured in terms of rupee sales value rather than units. This is done by dividing the fixed costs or overheads by the contribution margin ratio (contribution margin divided by selling price). Generally, in these types of computations, the desired profit is added to the fixed costs in the numerator in order to ascertain the sales volume necessary for producing the target profit.

If management plans for a certain profit, then revenue needed to cover all costs plus the desired profit is

$$P.\ Q. = TR = TFC + AVC \times Q + \text{Profit}$$

and $$Q_B = \frac{TFC + \text{Profit}}{P - AVC}$$

or $$Q_B = \frac{TFC + \pi}{P - AVC} = \frac{TFC + \pi}{ACM} \quad \text{where, p = Profit.}$$

and $$S_B = P.\ Q_B = \frac{TFC + \pi}{1-\left(\frac{AVC}{P}\right)}$$

and $$\%\ B = \frac{TFC + \pi}{(P - AVC)\ (Q(cap))}$$

Thus, in the example used above,

Q_{cap} = 20,000

P = ₹ 100

AVC = ₹ 20

TFC = ₹ 200,000

Q_B = 2500 units

S_B = ₹ 250,000

% B = 12.5

Notes

If the management now wants to earn a target profit of ₹ 50,000, then we get new levels of Q_B = 321,500 and % B = 15,625. If we add this target profit to the fixed costs we see that the break even levels of all three factors we increased. The information in this example could be extended so as to make provisions for such factors as payment of taxes or for payment of any other fixed obligations that might be associated with the fixed costs (such as interest payments on bonds or debentures used to finance an investment).

12.7 Costing Techniques

The following are the various techniques of costing, which are nothing but vital tools of ascertaining costs:

1 ***Uniform Costing:*** It is the use of same costing principles and practices by several undertakings for common control and comparison of costs.

2. ***Marginal Costing:*** It is another tool of costing, by studying the difference in between the fixed and variable cost in order to determine the influence of change in the level of output on the cost per unit.

3. ***Historical Costing:*** It is another technique of costing through which the costs of the yester horizon are ascertained.

4. ***Direct Costing:*** It is the practice of charging all direct variable and fixed costs which are in relation with the operations, processes or products by leaving all other costs which are normally written off against the profits.

5. ***Absorption Costing:*** It is unlike the marginal costing technique, includes the fixed cost of operations along with the variable cost of production.

6. ***Standard Costing:*** It is another tool of costing which normally facilitates the firm to determine the deviation in between the actual and standards in order to exercise the control of deviations through corrective measures.

12.8 Decisions Involving Alternative Choices

The need for a decision arises in business because a manager is faced with a problem and alternative courses of action are available. A manager have to take different decisions like make or buy, continue or shut down, etc. to make the maximum profit. In deciding which option to choose he will need all the information which is relevant to his decision; and he must have some criterion on the basis of which he can choose the best alternative. Some of the factors affecting the decision may not be expressed in monetary value. Hence, the manager will have to make 'qualitative' judgements, e.g. in deciding which of two personnel should be promoted to a managerial position. A 'quantitative' decision, on the other hand, is possible when the various factors, and relationships between them, are measurable.

12.9 Summary

- Marginal costing is one of the important tools of management not only to take decision, but also to fix an appropriate price and to assess the level of profitability.
- Marginal cost is nothing, but a change occurred in the total cost due to small change in the quantity produced.
- The cost-volume-profit analysis is a tool to show the relationship between various ingredients of profit planning.

Notes

- The crucial step in this analysis is the determination of break-even point.
- BEP is defined as the sales level at which the total revenue equals total cost.

12.10 Keywords

BEP (Units): It is the level of units at which the firm neither incurs a loss nor earns profit.

BEP (Volume): It is the level of sales in Rupees at which the firm neither incurs a loss nor earns profit.

Contribution: It is an amount of balance available after the deduction of variable cost from the sales.

Marginal Cost: Change occurred in the cost of operations due to change in the level of production.

PV Ratio: Profit volume ration which is nothing but the ratio in between the contribution and sales.

Variable Cost: It varies along with the level of production.

12.11 Self Assessment

Fill in the blanks:

1. ..... technique is also known by other names as "Full costing" or "Traditional costing".
2. ..... is the cost nothing but a change occurred in the total cost due to changes taken place on the level of production i.e either an increase/decrease by one unit of product.
3. The ..... helps management in finding out the relationship of costs and revenues to profit.
4. The ratio or percentage of contribution margin to sales is known as .....
5. Under marginal Cost pricing, selling price is determined by adding a ..... on total variable costs.
6. The ..... analysis is a tool to show the relationship between various ingredients of profit planning.
7. ..... is one of the important tools of management not only to take decision, but also to fix an appropriate price and to assess the level of profitability.

State the following are true or false:

8. P/V ratio = Marginal contribution/Sales
9. Lower the P/V ratio more will be the profit and higher the P/V ratio, lesser will be the profit.
10. Break even analysis examines the relationship between the total revenue, total costs and total profits of the firm at various levels of output.
11. Break even point is that volume of sales where the total costs is higher than the total revenue.

Notes

12.12 Review Questions

1. SV Ltd. a multi-product company, furnishes you the following data relating to the year 1979:

Particulars	First half of the year	Second half of the year
Sales	₹ 45,000	₹ 50,000
Total cost	₹ 40,000	₹ 43,000

Assuming that there is no change in prices and variable costs that the fixed expenses are incurred equally in the two half year periods calculate for the year 1979.

Calculate:

(a) PV ration

(b) Fixed expenses

(c) Break even sales

(d) Margin of safety

2. Analyse the important of the following in relation to break-even analysis:

(a) Break-even point

(b) Margin of safety

(c) Profit volume ratio

3. Illustrate the graphic approach of BEP analysis.

4. Examine the concept of the profit volume ratio.

5. The following figures are extracted from the books of KSBS Ltd. Find out profit by using marginal costing and absorption costing. Is there any variations in the results obtained under the two methods is given below?

The basic production data are:

Normal volume of production = 19,500 units per period

Sale price - ₹ 4 per unit

Variable cost - ₹ 2 per unit

Fixed cost - ₹ 1 per unit

Total fixed cost = ₹ 19,500 (₹ 1 × 19,500 units, normal)

Selling and distribution costs have been omitted. The opening and closing stocks consist of both finished gods and equivalent units of work-in-progress.

Other information

	Period 1	Period II	Period III	Period IV	Total
Opening stock units	–	–	4,500	1,500	–
Production units	19,500	22,500	18,000	22,500	82,500
Sales units	19,500	18,000	21,000	24,000	82,500
Closing stock units	–	4,500	1,500	–	–

Notes

6. A company makes and sells a single product. At the beginning of period 1, there is no opening stock of the product, for which the variable production cost is ₹ 4 and the sale price is ₹ 6 per unit. Fixed costs are ₹ 2,000 per period of which ₹ 1,500 are fixed production costs.

   The following details are available:

	Period 1	**Period 2**
Sales	1,200 units	1,800 units
Production	1,500 units	1,500 units

   What would be the profit in each period using

   (a) Absorption costing (assume normal output is 1,500 units per period); and

   (b) Marginal costing?

7. Sales are ₹ 1,50,000, producing a profit of ₹ 4,000 in period I. Sales are ₹1,90,000, producing a profit of ₹ 12,000 in period II. Determine the BEP.

8. There are two businesses D and Y, selling identical products in the market. The following are the budget figures related to a particular year.

	D	**Y**
Sales	5 lakh	5 lakh
VC	4 lakh	3.5 lakh
FC	0.5 lakh	1 lakh
Profit	0.5 lakh	0.5 lakh

   You are requested to calculate BEP for the two businesses.

9. KSBS Co. produces a simple article and sells it at ₹100 each at the mat. Cost of production is ₹ 60 p/unit and fixed cost ₹40,000 P/annum. Calculate:

   (a) P.V(ratio)

   (b) BEP (sales)

   (c) Sales to earn a profit of ₹50,000

   (d) Profit at a sale of ₹3,00,000

   (e) New BEP when S.P. is reduced by 10%

10. From the following information, calculate PV (r) and BEP

    (a) SP (P.U.)-₹ 10

    (b) Trade discount-5%

    (c) Direct Material cost (P.U.) – ₹ 2

    (d) Fixed overhead – 100% OR direct labour cost

Notes

Answers: Self Assessment

1.	Absorption costing	2.	Marginal cost
3.	Cost-Volume-Profit (CVP) analysis	4.	P/V ratio.
5.	mark up or margin	6.	cost-volume-profit
7.	Marginal costing	8.	true
9.	false	10.	true
11.	false		

12.13 Further Readings

Books

B.M. Lall Nigam and I.C. Jain, *Cost Accounting*, Prentice-Hall of India (P) Ltd.

Hilton, Maher and Selto, *Cost Management*, 2nd Edition, Tata McGraw-Hill Publishing Company Ltd.

M.N. Arora, *Cost and Management Accounting*, 8th Edition, Vikas Publishing House (P) Ltd.

M.P. Pandikumar, *Management Accounting*, Excel Books.

Online links

www.allbusiness.com

www.internalaccounting.com

Unit 13: Decision Involving Alternative Choices

Notes

CONTENTS

Objectives

Introduction

13.1 Concept of Decision-making

13.2 Determination of Sales Mix

13.3 Make or Buy Decisions

13.4 Own or Hire

13.5 Shut Down or Continue

13.6 Summary

13.7 Keywords

13.8 Self Assessment

13.9 Review Questions

13.10 Further Readings

Objectives

After studying this unit, you will be able to:

- Explain the concept of marginal costing decisions
- Take decisions like makes or buy, own or hire and shut down or continue etc.

Introduction

The need for a decision arises in business because a manager is faced with a problem and alternative courses of action are available. A manager have to take different decisions like make or buy, continue or shut down, etc. to make the maximum profit. In deciding which option to choose he will need all the information which is relevant to his decision; and he must have some criterion on the basis of which he can choose the best alternative. Some of the factors affecting the decision may not be expressed in monetary value. Hence, the manager will have to make 'qualitative' judgements, e.g. in deciding which of two personnel should be promoted to a managerial position. A 'quantitative' decision, on the other hand, is possible when the various factors, and relationships between them, are measurable.

13.1 Concept of Decision-making

Marginal cost helps management to make decision involving consideration of cost and revenue.Basically, marginal costing furnishes information regarding additional costs to be incurred if anadditional activity is to be taken up or the saving in costs which may be expected if an activityis given up. This can be compared with the benefit expected from the proposed course of actionand thus the management will be able to take the appropriate decision.

Decision-making describes the process by which a course of action is selected as the way to dealwith a specific problem. A decision involves the act of choice and the alternative chosen out ofthe available alternatives.

Notes

According to Heinz Weihrich and Horold Koontz, "Decision-making is defined as the selectionof a course of action from among alternatives."

George R. Terry says, "Decision-making is the selection based on some criteria from two ormore possible alternatives."

According to Haynes and Masie, "Decision-making is a course of action which is consciouslychosen for achieving the desired results."

Following are the important areas of decision-making or applications of marginal costing:

1. Fixation of Price,
2. Decision to Make or Buy,
3. Selection of a Profitable Product Mix,
4. Decision to Accept a Bulk Order,
5. Closure of a Department or Discontinuing a Product,
6. Maintaining a Desired Level of Profit, and
7. Evaluation of Performance.

13.2 Determination of Sales Mix

In the market, dealership is offered by the various companies to the individual intermediaries in promoting the sale of products. Before reaching an agreement with the company to act as a dealer, normally every individual consider the profitability of the product mix offered by the firm. For example, There are two different companies brought forth their advertisements in offering the dealership to the individual trading firms *viz.* HCL and IBM.

The profitability under the dealership banner should be appropriately considered prior to take decision. To take rational decision, the firm should compare the profitability of both different dealership of two different giant industrial brands. The greater the share of the profitability in volume will be selected and vice-versa.

Example: From the following information has been extracted of EXCEL Rubber Products Ltd:

Direct materials A	₹ 16
Direct Materials B	₹ 12
Direct wages A	24 Hrs at 50 paise per hour
Direct wages B	16 Hrs at 50 paise per hour
Variable overheads	150% of wages
Fixed overheads	₹ 1,500
Selling price A	₹ 50
Selling price B	₹ 40

The directors want to be acquainted with the desirability of adopting any one of the following alternative sales mixes in the budget for the next period:

1. 250 units of A and 250 units of B
2. 400 units of B only

Notes

3. 400 units of A and 100 units of B

4. 150 units of A and 350 units of B

State which of the alternative sales mixes you would recommend to the management?

Solution:

The first step is to determine the contribution margin per unit of A and B

The determination of the contribution of product A and B are through the preparation of Marginal costing statement.

Particulars	Product A (₹)		Product B (₹)	
Selling price		50		40
Less: Direct Materials	16		12	
Direct wages	12		8	
Variable overheads	18		12	
Variable cost		46		32
Contribution		4		8

The next step is to determine the profit level of every mix

1. 250 units of A and 250 units of B.

   The first step is to determine the total contribution of the mix. Why the total contribution has to be found out?

   The main reason is to determine the profit level of the mix through the deduction of the fixed overheads

		₹
Product of A	250 units × 4 =	1,000
Product of B	250 units × 8 =	2,000
Contribution		**3,000**
Fixed overheads		1,500
Profit		**1,500**

2. 400 units of B only

   Product B Contribution 400 units × ₹8 = 3,200

Fixed overheads	1,500
Profit	**1,700**

3. 400 units of A and 100 units of B

Product of A	400 units × ₹4	1,600
Product of B	100 units × ₹8	800
Contribution		**2,400**
Fixed overheads		1,500
Profit		**900**

Notes

4. 150 units of A and 350 units of B

Product A	150units × ₹4	600
Product B	350units × ₹8	2,800
Contribution		**3,400**
Fixed overheads		1,500
Profit		**1,900**

Mix	A	B	C	D
Contribution	₹ 1,500	1,700	900	**1,900**

The profit level among the given various mixes, the mix (d) is able to generate highest volume of profit over the others.

Determining optimum level of operations: Under this method, the level has to be found out which is having lesser selling price, cost of operations and greater profits known as optimum level of operations

13.3 Make or Buy Decisions

The firms, which are routinely in need of spares, accessories are bought from the outsiders instead of any production or manufacturing, though the requirement is at regular intervals. Most of the automobile manufacturers are usually buying the components from outside instead of producing them on their own. The Maruti Udyog Ltd. had given a contract to the Nettur Technical Training Foundation, Bangalore to design the tool for the panel and to manufacture regularly to the tune of the orders.

The leading four wheeler manufacture in India is buying the panel from the NTTF on contract basis in stead of manufacturing.

Why don't they manufacture in spite of buying them from the NTTF?

The main reason of buying is cheaper than the production of an article.

Example: The management of a company finds that while the cost of making a component part is ₹ 20, the same is available in the market at ₹ 18 with an assurance of continuous supply.

Give a suggestion whether to make or buy this part. Give also your views in case the supplier reduces the price from ₹ 18 to ₹ 16

The cost information is as follows:

	₹
Material	7.00
Direct Labour	8.00
Other variable expenses	2.00
Fixed expenses	3.00
Total	₹ 20.00

The first point to be found out that the contribution of the transaction. The cost of manufacturing should be compared with the price of the product which is available in the market.

Notes

To find out the worth of the transactions, first the cost of manufacturing should be found out

	₹
Material	7.00
Direct Labour	8.00
Other variable expenses	2.00
Total	17.00

The cost of manufacturing a component is ₹ 17.00. While calculating the cost of manufacturing a component, the fixed expenses was not considered. The fixed expenses were not considered for computation. Why?

The costs will be incurred irrespective of the production status of the firm; for which the expenses should not be added.

If the company manufactures the product/component at ₹ 17 which will facilitate to book profit ₹ 1 from the price of ₹ 18 which is available from the market.

The next stage is decision criteria.

Worth of Production: Cost of the production < Price of the product available in the market

The firm is better advised to take the course of production rather than purchase of the product.

Worth of Purchase: Cost of the production > Price of the product available in the market

The product available in the market is dame cheaper than the manufacturing of a product. The firm is better advised to buy the product rather than the manufacturing of a product. If the product price comes down to the price of ₹ 16 facilitates the firm to save ₹ 1 from the cost of manufacturing.

13.4 Own or Hire

Marginal costing helps in taking the decisions regarding the capital investment. Marginal costing helps to take the decisions for owning the capital asset or hire the asset.

Example: If company X needs a machinery for a specific project and after that project there is no use of the machinery then company can decide to hire the machinery for that project.

A company has its own trucks for transporting raw materials and finished products from one place to another. It seeks to replace these trucks by keeping public carriers. In making this decision, of course, the depreciation of the trucks is not to be considered but the management should take into account the present expenditure on fuel, salary to drive and maintenance.

13.5 Shut Down or Continue

As discussed earlier, marginal costing technique helps in deciding the profitability of a product. It provides the information in a manner that tells us how much each product contributes towards fixed cost and profit; the product or department that gives least contribution should be discarded except for a short period. If the management is to choose some product out of the given ones, then the products giving the highest contribution should be chosen and those giving the least should be discontinued.

Notes

Example: A company manufactures three products X, Y and Z. It has prepared the following budget for the year 2003:

	Total	Product X	Product Y	Product Z
Sales	4,20,000	80,000	2,50,000	90,000
Factory Cost				
Variable	2,90,500	40,000	1,74,000	76,500
Fixed	29,500	5,000	16,000	8,000
Production Cost	3,20,000	45,000	1,90,000	85,000
Selling and Administration Cost				
Variable	35,000	14,000	14,000	7,000
Fixed	8,000	3,500	3,200	1,300
Total Cost	3,63,000	62,500	2,07,200	93,300
Profit	57,000	17,500	42,800	- 3,300 (loss)

On the basis of above information, we understand that the company management is thinking to discontinue with the production of product Z which has shown loss. The management seeks your expert opinion on the issue before they take a final decision. You are required to comment on the relative profitability of the products.

Solution

The information contained in the budget may be rearranged in the form of a marginal cost statement as shown below:

Marginal Cost Statement

Particulars	Total	Product X	Product Y	Product Z
Sales	4,20,000	80,000	2,50,000	90,000
Variable Costs:				
Factory Cost	2,90,500	40,000	1,74,000	76,500
Selling and Admn.Cost	35,000	14,000	14,000	7,000
Total Marginal Cost	3,25,500	54,000	1,88,000	83,500
Contribution	94,500	26,000	62,000	6,500
Fixed Costs	37,500	8,500	19,200	9,800
Profit	57,000	17,500	42,800	-3,300 (loss)
Profit-Volume Ratio	22.5%	32.5%	24.8%	7.2%

Profit-Volume (P/V) ratio is the ratio of contribution to sales. It is expressed in terms of percentage. After preparing the above statement and analysis, we can make the following recommendations:

As discussed in the marginal cost statement, the contribution of product Z is ₹ 6,500 which goes toward the recovery of fixed cost of ₹ 9,800. If the production of product Z is discontinued, the company will lose the marginal contribution of ₹ 6,500 while it will have to incur the fixed cost of ₹ 9,800. The total profit of ₹ 57,000 will be reduced to ₹ 50,500 (57,000 - 6,500). Thus, it is advisable that the production of Z should not be discontinued. As regards the relative profitability, product X is more profitable than Y and Z as the P/V ratio in this case is highest. The production and sales of product X should, therefore, be encouraged.

Notes

13.6 Summary

- Marginal costing technique helps in determining the most profitable relationship between costs, prices and volume of business.
- Following are the important areas of decision-making or applications of marginal costing:
  - Fixation of Price,
  - Decision to Make or Buy,
  - Selection of a Profitable Product Mix,
  - Decision to Accept a Bulk Order,
  - Closure of a Department or Discontinuing a Product,
  - Maintaining a Desired Level of Profit, and
  - Evaluation of Performance.

13.7 Keywords

Decision-making: Decision-making describes the process by which a course of action is selected as the way to deal with a specific problem.

Desired Profit: It is a profit level desired by the firm to earn at the given level of sales volume.

Fixed Cost: It is a cost which is fixed or remains the same for irrespective level of production.

Key Factor: Factor of influence on the component of contribution.

Marginal Cost: Change occurred in the cost of operations due to change in the level of production.

13.8 Self Assessment

Choose the appropriate answer:

1. If the supply of the material is considered to be scared in the market for two different units of production of ABC Ltd. How the worth of the units of production could be studied through Key factor analysis

   (a) Contribution per unit (b) Contribution per labour

   (c) Contribution per hour (d) None of the above

2. While accepting export order, which component of influence should not be taken into consideration:

   (a) Direct material (b) Direct expenses

   (c) Direct labour (d) Fixed cost

3. If Licon Co Ltd. wants to induct a product B along with the existing product line, what would be the deciding factor to undertake or reject

   (a) Composite contribution (b) Fixed cost

   (c) Contribution margin per unit (d) None of the above

Notes

Fill in the blanks:

4. Desired profit is a profit level desired by the firm to earn at the given level of .....
5. A ..... decision is possible when the various factors, and relationships between them, are measurable.
6. A ..... involves the act of choice and the alternative chosen out of the available alternatives.
7. ..... describes the process by which a course of action is selected as the way to deal with a specific problem.
8. If a machinery is required for a specific project and after that project there is no use of the machinery then company can decide to ..... the machinery for that project.

13.9 Review Questions

1. A refrigerator manufacturer purchases a certain component @ ₹ 50 per unit. If he manufactures the same product he has to incur a fixed cost of ₹ 20,000 and variable cost per unit is ₹ 40 when can the manufacturer make on his own or when he can buy from outside?

   When the requirements is ₹ 5,000 units, will you advise to make or buy?

2. From the following data, which product would you recommend to be manufactured in a factory, time being the key factor?

Particulars	Per unit of Product A (₹)	Per unit of Product B (₹)
Direct Material	24	14
Direct Labour @ ₹ 1per hr	2	3
Variable overhead ₹ 2 per hr	4	6
Selling price	100	110
Standard time to produce	2 Hours	3 Hours

3. The following particulars are obtained from costing records of a factory:

Particulars	Per unit of Product A (₹)	Per unit of Product B (₹)
Direct Material ₹ 20 per Kg	80	320
Direct Labor @ ₹ 10 per hr	100	200
Variable overhead	40	80
Selling price	400	1,000
Total fixed overheads	₹ 30,000	

4. A factory engaged in manufacturing plastic buckets is working at 40% capacity and produces 10,000 buckets per annum.

   The present cost break up for bucket is as under

Material	₹ 10
Labour	₹ 3
Overheads	₹ 5(60% fixed)

   The selling price is ₹ 20 per bucket.

Notes

If it is decided to work the factory at 50% capacity, the selling price falls by 3%. At 90% capacity the selling price falls by 5% accompanied by a similar fall in the prices of material.

You are required to calculate the profit at 50% and 90% capacities and also calculate break even point for the same capacity productions.

5. Examine the various kinds of managerial decisions.

6. The management of a company is very much perturbed by the result of product O which is one of the three products. The cost and other data are given below:

Products →	M (Rs.)	N (Rs.)	O (Rs.)	Total
Sales	1,20,000	60,000	90,000	2,70,000
Materials	15,000	7,500	15,000	37,500
Labour	6,000	7,500	24,000	37,500
Variable overheads	15,000	7,500	30,000	52,500
Fixed overheads	30,000	15,000	30,000	75,000
Total cost	66,000	37,500	99,000	2,02,500
Analysis of Fixed expenses :				
Identified	21,000	12,000	24,000	57,000
General	--	--	--	18,000

The product O has an assured market and no cost reduction is possible. Present these data in a suitable form and recommend whether or not product O should be discontinued?

(***Ans.*** Closure of product O will save ₹ 3,000)

7. A confectioner of sweets markets three products, all of which require sugar. His average monthly sales, cost of sales and sugar consumption are as follows:

Products →	X	Y	Z	Total
Sales (Rs.)	10,000	12,000	8,000	30,000
Variable cost of sales (Rs.)	6,000	8,000	5,600	19,600
Sugar needed (Kg.)	500	800	240	1,540

Due to government restrictions his sugar quota has been reduced to 1,405 Kg. per month. Suggest a suitable product mix.

(***Ans.*** Product X ₹ 10,000, Product Y ₹ 9,975 and Product Z ₹ 8,000)

8. Company manufacturing electric motors at a price of ₹ 6,900 each, made up as under:

	Cost in ₹
Direct material	3,200
Direct wages	400
Variable overheads	1,000
Fixed overheads	200
Depreciation	200
Variable selling overheads	100
Royalty	200

Notes

Profit	1,000
Central excise duty	600
Total	6,900

(a) A foreign buyer has offered to buy 200 such motors at ₹ 5,000 each. As a cost accountant of the company would you advise acceptance of the offer?

(b) What should the company quote for a motor to be purchased by a company under the same management if it would be at cost.

(Ans. (a) Accept it because incremental profit is ₹ 40,000 and (b) ₹ 5,200)

9. The management of a company finds that while the cost of making a component part is ₹ 10, the same is available in the market at ₹ 9 with an assurance of continuous supply.

Give a suggestion whether to make or buy this part. Also give your views in case the supplier reduces the price from ₹ 9 to ₹ 8.

The cost information is as follows:

	₹
Material	3.50
Direct labour	4.00
Other variable expenses	1.00
Fixed expenses	1.50
Total	10.00

10. The following information has been made available from the cost records of United Automobiles Ltd. manufacturing spare parts.

Direct Materials	**Per Unit**
X	₹8
Y	6
Direct wages	
X	24 hours at 25 paise per hour
Y	16 hours at 25 paise per hour
Variable overheads	150% of wages
Fixed overheads	₹ 750
Selling price	
X	₹25
Y	20

The directors want to be acquainted with the desirability of adopting any one of the following alternative sales mixes in the budget for the next period.

(a) 250 units of X and 250 units of Y

(b) 400 units of Y only

Notes

(c) 400 units of X and 100 units of Y

(d) 150 units of X and 350 units of Y.

State which of the alternative sales mixes you would recommend to the management?

Answers: Self Assessment

1.	(a)	2.	(d)
3.	(c)	4.	sales volume
5.	quantitative	6.	decision
7.	Decision-making	8.	hire

13.10 Further Readings

Books

B.M. Lall Nigam and I.C. Jain, *Cost Accounting*, Prentice-Hall of India (P) Ltd.

Hilton, Maher and Selto, *Cost Management*, 2nd Edition, Tata McGraw-Hill Publishing Company Ltd.

M.N. Arora, *Cost and Management Accounting*, 8th Edition, Vikas Publishing House (P) Ltd.

M.P. Pandikumar, *Management Accounting*, Excel Books.

Online links

www.allbusiness.com

www.internalaccounting.com

Notes

Unit 14: Pricing Decision

CONTENTS

Objectives

Introduction

14.1 Objectives

14.2 Types of Pricing Decisions

14.3 Factors Affecting Pricing Decisions

14.4 Methods of Pricing

14.4.1 Full Cost Pricing

14.4.2 Variable/Marginal Cost Pricing

14.4.3 Rate of Return Pricing

14.4.4 Break-even Pricing

14.4.5 Minimum Pricing

14.5 Transfer Pricing

14.6 Summary

14.7 Keywords

14.8 Self Assessment

14.9 Review Questions

14.10 Further Readings

Objectives

After studying this unit, you will be able to:

- Explain the concept of pricing decisions
- Describe the objectives and types of pricing decisions
- State the factors affecting pricing decisions
- Explain the methods of pricing decisions
- Define transfer pricing

Introduction

Pricing which is part of the overall marketing strategy plays a very critical role in the success of a company as it is able to increase the profitability and or increase the market share.

Normally, the higher the prices means higher profit being attained but might means lower market share. Pricing ties very closely with the various stages of a product life cycle. Under normal circumstances, selling price is based on total cost, i.e., production, administration and

Notes

selling overheads – fixed as well as variable plus normal profit. In the long-term planning, selling price must cover all costs plus a desired profit. There are, however, a variety of business situations where fixation of selling price may vary from inclusion of desired profit to selling even below total cost. Marginal costing technique helps in determining the most profitable relationship between costs, prices and volume of business.

When there is considerable unfilled capacity it may be necessary to accept a lower contribution in order to provide work in the factory. Alternatively, if there is sufficient order, normal price may be quoted and the contribution obtainable may be high. The aim of the fixer of prices is to sell the present and future capacity for the greatest obtainable contribution. When the capacity remains unused, the potential contribution is being sacrificed and the acceptance of an order with a lower contribution will at least partially meet from fixed costs being incurred. This amount of contribution would otherwise be lost if the order is refused. In fixing the lower price than normal, the price fixed must take into consideration the following:

1. The amount of contributions at the proposed price;
2. The possibility of other more remuneration job;
3. Comparison with normal selling price in order to determine the concession being offered; and
4. the possible adverse effect upon the future sales and customer's confidence in the company's pricing or trading policy.

Example: X Ltd. is found to be working below the normal capacity due to recession. The directors have been approached by another company with an enquiry for a special purpose job. the costing department estimated the following in respect of that job:

Direct materials ₹ 1,00,000

Direct labour 5000 hours @ ₹ 3 = 15,000

Overheade costs: Normal recovery rates:

Variable = Re 1 per hour.

Fixed = ₹ 1.50 per hour.

You are required to advise the company on the minimum prices to be charged.

Solution:

Marginal costs will have to be determined as follows:

		₹
1.	Direct materials	1,00,000
2.	Add: Direct Labour	15,000
3.	Add: Variable overhead @ Re 1 per hour for 5000 hours	5,000
4.	Total marginal costs	1,20,000

The floor price, the absolute minimum price should be ₹ 1,20,000. That is, a total of marginal costs. At this level, it will not make any contribution. Hence, a certain portion of fixed costs must be added to the marginal costs to accept the job with profit. In this case, the fixed overhead is found to be ₹ 7,500 (5,000 hours × ₹ 1.5 per hour).

Thus, this technique assists in pricing a product.

Notes

14.1 Objectives of Pricing Decisions

The following are the key objectives of pricing decisions:

1. The important pricing objective is to exploit the firm's competitive position in the market place.
2. The products are priced in such a way that sufficient resources are made available for the firm's expansion, developmental investment, etc.
3. Some companies adopt the main pricing objectives so as to maintain or to improve the market share towards the product. A good market share is a better indication of progress.
4. The pricing objectives may be to meet or prevent competition.
5. It also prevents price war amongst the competitors.
6. Product Line pricing to maximise long-term profits is another price objective.

14.2 Types of Pricing Decisions

The following are the key types of pricing decisions:

1. ***Perceived Value Pricing Method:*** In this method, prices are decided on the basis of customer's perceived value. They see the buyer's perceptions of value, not the seller's cost as the key indicator of pricing. They use various promotional methods like advertising and brand building for creating this perception.
2. ***Value Pricing Method:*** In this method, the marketer charges fairly low price for a high quality offering. This method proposes that price represents a high value offer to consumers.
3. ***Going Rate Pricing:*** In this method, the firm bases its price on the average price of the product in the industry or prices charged by competitors.
4. ***Sealed Bid Pricing:*** In this method, the firms submit bids in sealed covers for the price of the job or the service. This is based on firm's expectation about the level at which the competitor is likely to set up prices rather than on the cost structure of the firm.
5. ***Psychological Pricing:*** In this method, the marketer bases prices on the psychology of consumers. Many consumers perceive price as an indicator of quality. While evaluating products, buyers carry a reference price in their mind and evaluate the alternatives on the basis of this reference price. Sellers often manipulate these reference points and decide their pricing strategy.
6. ***Odd Pricing:*** In this method, the buyer charges an odd price to get noticed by the consumer. A typical example of odd pricing is the pricing strategy followed by Bata. Bata prices are always an odd number like ₹ 899.99 etc.
7. ***Geographical Pricing:*** This is a method in which the marketer decides pricing strategy depending on location of the customer like domestic pricing, international pricing, third world pricing, etc. Multinational firms follow such a pricing strategy as they operate in different geographic locations.
8. ***Discriminatory Pricing:*** This is a method is which the marketer discriminates his pricing on certain basis like type of customer, location and so on. It occurs when a company sells product or service at two or more prices that do not reflect a proportional difference in the costs. One can sell at different prices in different segments. Different prices for different forms of the same product can sell the same product at two different levels depending on the image differences.

Notes

Caselet

Product Pricing

One of the tougher decisions that a marketing manager faces is how to price a product in the market.

In an existing market (i.e. where a new brand is being introduced in a category that already sees competition) the decision is a little easier than in a new market since the marketer can take some cues from the competition's price ranges.

In this situation, the marketer has to be clear about the segment being addressed by the new product. Once that is clear, he can choose from the following options:

Price the product on par with the competing product(s)

Price the product very close to the competing product(s)

Consciously price it quite a bit lower as an incentive to induce trial

The third decision could prove counter-productive; a lower price could adversely affect the brand value perception unless the communication strategy establishes a value-for-money platform. The other danger is that it could prevent the brand from increasing the price even later i.e. consumers who came in at the lower price may migrate away when the price is raised.

When launching a new product that is likely to create a new category altogether - as ready-to-eat chapatti did a few years back - the pricing decision in even tougher. Here, there is often no comparison point at all - the traditional method of making chapattis gives no pointers whatsoever to what consumers may pay for the new product.

Therefore, the marketer has to debate various scenarios. Pricing it low might encourage trials and good volumes, but the price may not prove viable in the long run. If priced too high, it could inhibit trials, so the product could be a non-starter.

Nonetheless, given that there are a large number of affluent consumers who are ready to spend, many marketers are in favour of pricing the product higher. It seems to be a given that a high price does more to create a perception of brand value than almost any other strategy.

As long as the boom in consumption sustains, this method would probably work well; if the economic conditions were to see a downtrend, then, probably, such a strategy would not work.

Unfortunately, market research does not help much in the area of pricing. Various pricing research models have been generated and being from the MR industry I have done my share of testing these models. But in a research situation, consumers become artificially conscious of the price point and, hence, become artificially price sensitive too. Thus, it is not unusual to see research respondents saying that a price increase of ₹ 2 in a pack priced at ₹ 10 would make them switch brands; in actual fact, the consumers probably didn't know whether the price was ₹ 10 or ₹ 11.

Till research methods evolve in this area, pricing decisions will continue to need a lot of gut feel and sagacity from the marketer.

Source: http://www.thehindubusinessline.in

Notes

14.3 Factors Affecting Pricing Decisions

Before a decision on the pricing is made, certain factors need to be consider:

1. What are the objectives of the company — to maximize profit/to gain market share/to penetrate the new market, etc.?
2. What are the existing economic conditions?
3. Any government regulations;
4. Cost structure of the organization;
5. Demand for the product which should includes a study of the price elasticity of demand;
6. Inflation;
7. Surplus production capacity;
8. Level of competition; and
9. Political scenario.

14.4 Methods of Pricing

The various methods of pricing include the following:

1. Full cost pricing;
2. Variable/Marginal cost plus pricing;
3. Rate of return pricing;
4. Break-even pricing;
5. Minimum pricing

14.4.1 Full Cost Pricing

Full Cost Pricing is a traditional method of pricing a product. It has following features:

1. Most commonly used method;
2. Prices are set by adding a percentage of profit (either a mark up or a margin) to the total cost of the product;
3. Consistent with the absorption costing technique;
4. Commonly used by wholesalers, retailers, construction contractors, services, government contractors.

Full Cost Pricing is useful in situation where:

1. Products are made based on specification by the customers;
2. Main objective is to make profit after considering fixed costs of the business;
3. The costs are difficult to estimate in advance;
4. Expected demand at different price levels is difficult to estimate.

Notes

Example: Let's look at Product A:

Production cost as follows:

Variable cost-material $1.50

Variable cost-labor $1.50

Total variable cost $3.00

Fixed cost $3.00

(excludes administrative and selling overheads)

Required 50% mark up on total production cost.

For Full-Cost Plus Pricing:

Total cost = $ 3.00 + $ 3.00 =$ 6.00

50% on total/full cost = 50% × $ 6.00 = $ 3.00

Hence, Selling price = $ 6.00 + $ 3.00 = $ 9.00 per unit.

By pricing at $ 9.00, the company wants Product A to at least cover its total production cost.

Full Cost Pricing has many advantages. A few of them are as under:

1. Easy and simple to understand;
2. Pricing decisions become standardized;
3. Adopts a conservative approach that in the long run to at least ensure the recovery of fixed cost of a business;
4. Difficult of estimating demands can be avoided.

Like everything else, full cost pricing also has certain disadvantages which are as under:

1. Tendency to set prices on inaccurate estimates;
2. Challenges of apportioning the fixed overheads properly into different products;
3. Unsuitable for short term decisions making particularly in situation like surplus production capacity, tendering for contracts price and others;
4. Ignores competition and price elasticity of demand; and
5. Ignores opportunity costs and relevant costs.

14.4.2 Variable/Marginal Cost Pricing

Under marginal Cost pricing, selling price is determined by adding a mark up or margin on the total variable costs (marginal cost). Its salient features are as under:

1. Based on the assumption that any price above variable cost would generate a certain level of contribution towards meeting fixed costs;
2. Consistent with the marginal costing technique;
3. When using this pricing method, need to be careful to ensure that it is sufficient to cover all fixed cost and to generate sufficient margin for profit otherwise the long term survival of the business might be at stake.

Notes

Example: Let's look at Product A:

Production cost as follows:

Variable/direct material $1.50

Variable/direct labor $1.50

Variable Production overheads $1.00

Variable Administrative overheads $0.50

Variable Selling overheads $0.10

Total variable costs $4.60

Say required mark up of 65% $3.00

Variable Cost Plus Pricing $7.60

The selling price is determined at $7.60 where the company wants Product A to at least cover its total variable cost and contribute towards recovery fixed costs and profit.

The Advantages of Variable/Marginal Cost Pricing are as under:

1. As it adopts the margin cost approach, it provides better information as it segregate the variable and fixed costs;
2. Highlights the importance of contribution;
3. Useful for contract bidding where competition could be quite intense;
4. Eliminates the difficulty of computing fixed costs into the products.

Disadvantages of Variable/Marginal Cost Pricing:

1. For short-term pricing decision, it's alright otherwise needs to be very careful the pricing in the long-term can recover fixed costs and generate sufficient profit for the business;
2. Might be unsuitable for production costs consist a lot of fixed costs.

14.4.3 Rate of Return Pricing

For this type of pricing, the company needs to specify the rate of return on its capital invested. Similar to Cost pricing, the difference is that the marked up will be based on the target rate of return. The salient features include:

1. The target rate of return varies with market norm or what management considers a fair return.
2. Useful method to use when a business has invested too much on the project or products.
3. However, difficult to use where a company has too many product lines or competes in many markets.

Example: Capital invested/employed $2,000,000

Target return 10%

Estimated costs $500,000

Mark up

= 10% × $2,000,000

$500,000

= 40%

Notes

14.4.4 Break-even Pricing

For this type of pricing, the price at which the products will break-even is used. This break-even price will then be added a profit mark up.

Example: If Fixed Cost $25,000, Variable cost $2.00 per unit, Number of Units produced 4,000 and Mark-up is 15% on the break-even price, what will be selling price to the customers?

Solution:

Break-even price = Fixed Cost + Variable Cost/Marginal Cost

Total Number of units produced = $25,000 + $8,000

4,000 = $8.25 + mark up of 15% ($1.24)

= $9.50 which is the selling price to the customer.

14.4.5 Minimum Pricing

For this type of pricing, the selling price is the lowest price that a company may sell its product. Normally the price will be the Total Relevant Costs of Manufacturing. Its salient features include:

1. Useful method in situations where there is a lot of intense competition, surplus production capacity, clearance of old stocks, getting special orders and or improving market share of the product.
2. Minimum Price is Incremental costs of manufacturing + Opportunity Costs (if any)

Example: Assuming the following details of product X:

Material	$2.50
Labor (2 hrs. @ $3.00)	$6.00
Variable production overhead	$2.50
Fixed production overhead	$1.20
Total	$9.70

Say that the labor is in short supply and is used for other product Y which generates a contribution of $6 per unit and requires 2 hours of the same labor.

Material $2.50

Labor $6.00

Variable production overhead $2.50

Add:

Opportunity cost from labor scarcity:

$6/2 hours= $3.00 per hr x 2 hr = $6.00

Minimum price = $17.00

Notes

14.5 Transfer Pricing

Large business units are usually organised into different divisions for better control. In such a situation, if one division supplies its finished output as input to other division, there arises a very important issue. The issue being at which price should be transferring unit transfer its product or service. Such price is known as transfer price.

Transfer prices are the amounts charged by one segment of an organization for a product or service that it supplies to another segment of the same organization.

Transfer price in simple words is the price that one sub-unit (segment, department, division and so on) of an organization charges for a product or service supplied to another subunit of the same organization. It is different from the normal price in that both divisions are a part of the same organisation and therefore it is only an internal transfer and not sale. The pricing of these flows is likely to have an impact on the performance evaluation of the divisions. Setting of transfer pricing policies within the company is of great significance. The important issue now is at what price should such transfers be made.

Did u know? Why do transfer-pricing systems exist?

1. To communicate data that will lead to goal-congruent decisions.
2. To evaluate segment performance and thus motivate managers toward goal-congruent decisions.
3. Multinational companies use transfer pricing to minimize their worldwide taxes, duties, and tariffs. Ideally, the chosen transfer-pricing method should lead each subunit manager to make optimal decisions for the organization as a whole. The three specific criteria that can help in choosing a transfer-pricing method are:

   (a) *Promotion of Goal Congruence:* Goal congruence exists when each divisional or sub-unit manager acting in his or her own best interest takes actions that automatically result in achieving the organisation goals established by top management.

   (b) *Promotion of a Sustained High Level of Management Effort:* Effort is defined as exertion towards a goal, for example, sellers are motivated to hold down costs of supplying product or service, and buyers are motivated to acquire and use inputs efficiently. The environment in the organisation should be such that a sustained high level of management effort is promised.

   (c) *Promotion of a High Level of Subunit Autonomy in Decision-making:* Autonomy is the degree of freedom a division manager can exercise in decisions making. If top management favours a high degree of decentralization, this criterion is of particular importance.

   Transfer pricing is a critical issue in the organisation. This is because the transfer price decides:

4. The revenue of the supplying division thus influences divisional profit; and
5. The cost of the receiving division thus influences divisional profit.

Notes

14.6 Summary

- Pricing which is part of the overall marketing strategy plays a very critical role in the success of a company as it is able to increase the profitability and or increase the market share
- Before determining prices certain important factors should be taken care of.
- The various methods of pricing include the following: Full cost pricing; Variable/Marginal Cost Plus pricing; Rate of Return Pricing; Break-even Pricing; Minimum Pricing, etc.

14.7 Keywords

Marginal Cost Pricing: Under marginal Cost pricing, selling price is determined by adding a mark up or margin on the total variable costs (marginal cost).

Transfer Prices: Transfer prices are the amounts charged by one segment of an organization for a product or service that it supplies to another segment of the same organization.

Marginal Costing Technique: Marginal costing technique helps in determining the most profitable relationship between costs, prices and volume of business.

14.8 Self Assessment

Choose the appropriate answer:

1. Which of the following is not a method of pricing?

   (i) Selling Price Plus (ii) Rate of Return Pricing

   (iii) Break-even Pricing (iv) Minimum Pricing

2. What is the level of sales in Rupees at which the firm neither incurs a loss nor earns profit, know as?

   (i) BEP (Units) (ii) BEP (Volume)

   (iii) BEP (Sales) (iv) BEP (budget)

Fill in the blanks:

3. Pricing ties very closely with the various stages of a ..... .
4. ..... Cost Pricing is a traditional method of pricing a product.
5. For minimum pricing, the selling price is the ..... price that a company may sell its product.
6. ..... is a useful method in situations where there is a lot of intense competition.
7. The target rate of return varies with ..... or what management considers a fair return.
8. ..... eliminates the difficulty of computing fixed costs into the products.
9. Multinational companies use ..... to minimize their worldwide taxes, duties, and tariffs.
10. Full Cost Pricing is a ..... of pricing a product.
11. Pricing ties very closely with the various stages of a .....

Notes

14.9 Review Questions

1. "Pricing plays a very important role in the marketing strategy of a firm and a significant one in the overall success." Evaluate the statement.
2. Transfer prices are the amounts charged by one segment of an organization for a product or service that it supplies to another segment of the same organization. Define.
3. The aim of the fixer of prices is to sell the present and future capacity for the greatest obtainable contribution. Discuss.
4. Illustrate full cost pricing with a suitable example.
5. If Fixed Cost $25,000, Variable cost $2.00 per unit, Number of Units produced 4,000 and Mark-up is 15% on the break-even price, what will be selling price to the customers?
6. Setting of transfer pricing policies within the company is of great significance. Why?
7. Discuss the concept of Goal congruence.
8. From the details given below calculate minimum price of product X:

Material	$3.50
Labor (2 hrs. @ $3.00)	$5.00
Variable production overhead	$2.50
Fixed production overhead	$1.20
Total	$9.70

9. What is the significance of using odd pricing strategies? Give some suitable examples.
10. Transfer pricing is a critical issue in the organisation. Why?

Answers: Self Assessment

1.	(i)	2.	(d)
3.	Product Life Cycle	4.	Full
5.	lowest	6.	Minimum pricing
7.	market norm	8.	Marginal cost pricing
9.	transfer pricing	10.	traditional method
11.	product life cycle		

14.10 Further Readings

Books

B.M. Lall Nigam and I.C. Jain, *Cost Accounting*, Prentice-Hall of India (P) Ltd.

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M.N. Arora, *Cost and Management Accounting*, 8th Edition, Vikas Publishing House (P) Ltd.

M.P. Pandikumar, *Management Accounting*, Excel Books.

Notes

Online links

www.allbusiness.com

www.internalaccounting.com